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A Clinical Lecture
ON
SOME OLD AND NEW REMEDIES.

Delivered at the Liverpool Royal Southern Hospital on March 6th, 1905,

BY WILLIAM CARTER, M.D., LL.B. LOND., F.R.C.P. LOND.,

PHYSICIAN TO THE HOSPITAL AND PROFESSOR OF THERAPEUTICS AT THE UNIVERSITY OF LIVERPOOL.

GENTLEMEN,—A short time ago I read before the Liverpool Medical Institution a paper entitled "Notes on Old and New Remedies." I propose to continue the subject to-day, illustrating my remarks by reference to cases, most of which you are acquainted with from having watched them within the hospital.

Oil of turpentine is a very old remedy and adrenalin is a very young one and one which, owing perhaps largely to its youth, has a loud voice which it makes extensively heard. Both claim to be powerful vascular astringents and each is often, though neither always, very useful. A case or two will illustrate this statement.

CASE 1.—The patient, a man, aged 40 years, was admitted to hospital on Dec. 1st, 1904, with all the signs of extensive left pleural effusion. I saw him immediately after admission and directed that the pleural cavity should be at once aspirated, the skin over the left side of the chest to be then painted with a 10 per cent. solution of oleate of mercury in oleic acid, iodide of potassium to be administered three times daily, and a dry diet to be given. 102 ounces of a very deeply blood-stained fluid were drawn off. The colour was bright and the fluid was opaque to light, but on standing threw down a deep layer of corpuscles below a clear serum. Adrenalin solution, 1 in 1000, was injected immediately after the tapping. In 13 days reaccumulation had occurred and 115 ounces of an exactly similar fluid were withdrawn and adrenalin solution was again injected. After eight days further 108 ounces were withdrawn, followed as before by the immediate introduction of adrenalin solution. Shortly afterwards I called my colleagues into consultation and especially requested their opinion as to the advisability of resecting portions of one or more ribs with the view of bringing about contact between the visceral and parietal pleuræ. They were opposed to the proceeding on the ground that the large amount of blood pointed probably to malignant disease. I then prescribed ten minims of oil of turpentine three times a day in capsules, which I had hesitated to do previously, as a considerable amount of albumin was present in the urine. The reaccumulation which appeared to be commencing was checked and a fortnight later on introducing a fine explorer I failed to obtain any liquid. The man, as you see, is now fairly well, with a slightly contracted left chest. If the oil of turpentine did not check the reaccumulation, which the adrenalin solution had three times failed to influence, I do not know to what the result is due.

A curious circumstance occurred earlier in the year which also pointed to the inefficacy of adrenalin under certain very special conditions.

CASE 2.—A patient, aged 34 years, was admitted on Feb. 6th suffering from stricture of the pylorus and the singular fact was that a fungating freely bleeding growth from the gum at the site of the upper left canine tooth was entirely uninfluenced by the application to it of a solution of adrenalin (1 in 1000) for a week; but all bleeding ceased immediately after the operation of gastro-enterostomy had been performed by Dr. W. Alexander and did not again occur during the further residence in hospital of the patient. He was operated on on March 23rd, 1904, and has been well ever since. Probably no hæmostatic would have had any effect.

Turning to another old remedy and its uses I wish to draw your attention to the fact that besides a considerable number of preparations, the effect of which when applied to the skin is to produce more or less severe irritation, the British Pharmacopœia in this the beginning of the twentieth century of the Christian era, and I do not know what period of advanced scientific enlightenment, contains at least six others which cause blisters wherever they are locally applied and which, therefore, are presumably designed to produce this effect, as they seem incapable of causing any other, at least any other that is not injurious. But is it possible that anybody to-day believes in the utility of blisters? A few years ago when ordering one to be applied over an acutely distended and painful rheumatically inflamed knee-joint in a negro I was confronted by one of the students with a passage from a text-book on the practice of medicine which he was studying. In it their application was strongly discredited and I was asked in a becoming manner by the student which teacher he was to follow. My reply was that he ought not slavishly to follow either but to carry out the purpose for which I supposed he had come to us—viz., to observe for himself the effect of what was ordered; and if in that particular instance it should prove to do nothing more than add the pain of a blister to the severe pain of the rheumatic inflammation and effusion he would know what conclusion to come to. This advice was followed and he heard from the patient shortly afterwards that much relief to pain, instead of exaggeration of it, had followed the use of the blister, and he saw for himself so considerable a reduction of the swelling that for that case, at any rate, he was convinced of the utility of the practice. That is the kind of proof that commends itself most strongly to my mind. Gentlemen may give me any number of scientific reasons why in the nature of things a given result ought not to follow a certain course of action, yet I am driven to conclude that they and not the nature of things must be wrong if, in spite of what they say, I see that it actually does follow. And not only is this the case with regard to the *fact* of the application of a blister but equally as to the site where the application is to be made. In the negro it was applied directly over the inflamed knee-joint. Yet we are told that even if a blister can ever be supposed to do good it must on no account be applied very near to the inflamed part or it may increase instead of diminish the inflammation and thus do harm instead of good. "As a matter of practice, for instance, the rule is usually insisted upon that in a case of pericarditis the blister should not be put immediately over the pericardium but at some little distance from it." These are the words used by the author of one of the most popular books of to-day on the action of medicines and with them fully in my mind I ordered a large blister to be put directly over the pericardium in the case now to be mentioned which some, if not all, of you have seen, just as I ordered one to be applied directly over the knee-joint in the last.

CASE 3.—A young woman, aged 18 years, was admitted on Feb. 1st suffering from not very severe rheumatic inflammation of the wrists and with probably a small amount of pericardial effusion. On the day but one afterwards, while still taking the salicylate of sodium ordered by Dr. F. H. Salisbury before my visits, she became alarmingly ill—blue, breathless, with quick, feeble pulse—and as though she might not live throughout the day. The cause of this change was a very large and somewhat acute increase in the pericardial effusion and I sent a message to the only one of my surgical colleagues who happened then to be in the hospital to ask him to come to draw off some of the fluid. He came, recognised the extreme gravity of the girl's condition, but considered that paracentesis pericardii involved too much risk to admit of its being undertaken. The patient had extraordinarily large breasts which nearly met in the middle line and probably obscured the usual landmarks relied on in making the puncture. A large blister was therefore at once applied over the increased area of dulness. Its early effect seemed to be to rouse the poor girl from the condition of semi-lethargy into which she had sunk. Next day a to-and-fro rub was audible over the base and this descended day by day till it involved the entire cardiac area. For some days now she has been free from all danger, the apex beat being felt in the normal position when the huge breast is raised and nothing but the possible inconvenience of an adherent pericardium being left. That this may be a serious inconvenience in after life by crippling the coronary arteries and thus interfering with the heart's nutrition we are obliged, of course, to admit but all risk of immediate or even early danger is over. I wish to make two observations by way of caution. The application of so large a blister was followed, as it not infrequently is, by some amount of strangury and traces of blood in the urine, which were, however, soon subdued by making the patient drink freely of alum whey made by boiling a pint of

milk with a teaspoonful of powdered alum and straining away the curd. I also left directions that if any further blistering should be thought necessary the surface of the blister should be dusted with powdered camphor before application. Both of these methods you will find practically advantageous. Perhaps it was fortunate for the patient that the pericardial fluid was not withdrawn, as it is just possible that I might have been tempted, by a fear of a recurrence of her extremely perilous condition and by the apparent harmlessness of adrenalin in Case 1, to inject a little into the pericardium. But this, I must warn you, is a much more serious matter than injecting it into the pleural cavity, and if ever you sanction it you should be present to watch results so as to be ready promptly to counteract any injurious effects.

To turn now to some other remedies. Morphine is an old one, while pilocarpine is a comparatively new one. Both are of great use, both contract the pupils, but not infrequently there seems to be rivalry between them. The circumstances that may, in my opinion, occasionally render it advisable to select one rather than the other will be obvious from a case or two which I will relate.

CASE 4.—This case was that of a youth, aged 17 years, suffering from uræmic convulsions of the severest character, whom I saw with Dr. J. B. Edis on the afternoon of Feb. 23rd, 1905. The patient had had violent general convulsions at 3 P.M., at 3.5 P.M., and at 3.10 P.M. The tongue was bitten and the mind was so clouded that he could not understand anything which we said, as for example, that he should put out his tongue. He was extremely restless and so dropsical that the eyes were largely closed by œdema and it was with not a little difficulty that we were able to raise the upper lids enough to see that both pupils were widely dilated. The question put to me was whether it would be advisable to inject pilocarpine hypodermically, this substance being in readiness for the purpose. My strong advice, which was at once agreed to, was not to do this but to inject morphine instead. Before this could be done, however, another general convulsion occurred. A quarter of a grain of morphine hydrochloride was then introduced beneath the skin of the right forearm, while a messenger was sent for oxygen. There had been four fits in 20 minutes before the morphine was injected. 24 minutes then elapsed before another occurred. This, like the one attack which I had previously witnessed, was ushered in with wide dilatation of the pupils, a dilatation which under the influence of the morphine had for a time become much diminished. Again a quarter of a grain was injected. I was then obliged to leave but Dr. Edis kindly promised to keep me acquainted with the subsequent course of the case, which was that oxygen was procured shortly after the second injection, and its inhalation was at once commenced; that the intervals between the attacks became longer and longer until 9 40 P.M. when they ceased entirely. Now every part of this practice, both positive and negative, has been strongly condemned by some whose knowledge should entitle them to respect. Morphine is often said to be bad, pilocarpine to be good, and oxygen to be useless, and in some cases each one of these propositions would be true while in others they would as certainly be false, and your business here is to learn to discriminate between such of them as require opposite treatment though the disease may be called by the same name. One of the greatest banes of medicine is the elevation of the *obiter dicta*—for they are often nothing more, the mere chance expressions of men with a name concerning individual cases—into axioms supposed to be applicable to all, a bad kind of reasoning often followed by bad results. Such are those just mentioned—*dicta* uttered not surely on clinical but on what is termed scientific evidence. To take the last practice first. "In normal respiration the hæmoglobin of the arterial blood is practically saturated with oxygen, and can you hope to get more than saturation?" To this question, triumphantly propounded as if merely to ask it is to settle the entire subject in dispute, it might fairly be answered, if any answer were necessary, that oxygen exists in solution in the blood as well as in chemical combination and that whereas in ordinary respiration only 0·6 per cent. is dissolved, when pure oxygen is breathed this 0·6 rises to 3 per cent., or is multiplied five times; and when we consider that only 6 per cent. of the combined oxygen is ever used (for venous blood contains two-thirds of the 18·6 per cent. found in arterial blood) and that by administering the gas in a pure state we obtain nearly half as much again of readily available oxygen in solution as the entire amount capable of being utilised in ordinary conditions, we are surely entitled to ask if this may not be an advantage. But I must confess that I am content to rest the practice on a simpler basis than this and to point to the general convulsions, which recurred with the most alarming frequency up to the time of commencing the inhalation, and ceased to recur soon after it had been fairly established. I could not, of course, obtain frequent samples of urine for examination in the case under consideration. The small quantity which I did procure was acid, of specific gravity 1023, contained a very large amount of albumin, and microscopically presented numerous blood and other casts. But in a very similar case which occurred a few years ago in hospital, where the patient, a young woman, aged 18 years, was admitted in the status epilepticus and had frequent convulsive attacks with no intervening consciousness, we were able to procure the urine first by catheter and subsequently in the ordinary way and to prove that the specimen first examined, while its specific gravity was 1026, gave only 4·5 grains of urea to the fluid ounce, whereas that which was passed on the following day after the convulsions had ceased had a *lower* specific gravity (1020) but a much higher proportion of urea, as if the oxygen which was freely administered had caused the oxidation of poisonous nitrogenous products to the final term of harmless urea. The same diminution and final cessation of convulsions followed the oxygen as in the case which I have just related to you, but there was one marked difference between the two cases. This young woman's pupils were markedly contracted, while those of the youth were widely dilated, and I do not suppose that anyone would be foolish enough to inject morphine hypodermically when some unknown poisons were producing certain of the most marked effects caused by that drug. The young woman, like the young man, got perfectly well but neither would have done so if part of the practice applied to the one had been applied to the other. In the case of the young woman, some of the gentlemen around the bed, in reply to my question as to what could be done, suggested the hypodermic injection of pilocarpine. In both cases I think, for reasons which I shall give to you, this proceeding would have caused the patient's death.

But can anything be said in defence of using morphine? Yes, this—viz., that it seems rational to combat an unknown poison which widely dilates the pupils and causes general convulsions by employing one of the most powerful antagonisers of these symptoms. Then why not use pilocarpine, which, as everybody knows, antagonises atropine all along the line and might therefore have been expected to antagonise this unknown atropine-like poison which was doing all the mischief, the drug being at the same time credited with the power of eliminating urea and toxic products through the skin? If it did this and nothing more it would do no harm, even if it did no good. Urea is harmless and to get rid of it is of little advantage. But the reason for not using it is that the profuse outpouring of tracheal and bronchial, as well as salivary, secretion which pilocarpine invariably causes (and that even before the sweating which follows its use) may, and I believe does, kill patients where this outpouring occurs in those of them whose sensibilities are so blunted as to render them but little conscious of what is going on. If they are wide awake with all their senses acutely alive there can be no objection to its employment, but in such cases as those which I have mentioned it would be fatal. I do not suppose anyone would have been injudicious enough to inject morphine in the case of the young woman where the pupils were already contracted, while it would do nothing but good in the case of the youth and in all such cases, and pilocarpine would do harm in both alike. I am the more desirous of putting you on your guard in this matter because in my opinion the directions given with regard to the treatment of uræmia in some of the best modern treatises on the practice of medicine are dangerously loose and unguarded instead of being fenced about, as they should be, with strict limitations. I will not mention names, for authority in such matters should be subordinated to common-sense, but I will quote the very words of some justly esteemed recent books. Thus in one I read that "in uræmic coma sweating should be promoted by the use of pilocarpine or the hot bath"—the very condition of all others where pilocarpine should not be used. In a second we are told that "should the skin fail to respond ..... as in uræmia, pilocarpine (gr. ¼ to ½) should be injected, after which it will continue to pour out on the application of heat," without

a single word being said as to the circumstances—the existence, for example, of coma, which would render the practice dangerous. A third and still more recent book says in the same loose and unguarded way that "the removal of toxic products from the body makes it"—i.e., pilocarpine—"useful in uræmia."

Incidentally Case 4 seems also to dispose of one or two of those calmly dogmatic assertions to which we are apt to be treated, assertions which are probably received so deferentially because of the quiet assurance with which they are uttered, but which are often proved to be unfounded or at most to be only partially true as soon as a little rational scepticism followed by inquiry and observation is substituted for unquestioning credulity. We are informed, for example, that the poisons which cause convulsions are sometimes largely held in solution by the dropsical effusions, and that it is when these effusions are rapidly reabsorbed into the blood and conveyed through the cerebral circulation to the brain that the severer nervous symptoms of uræmia are manifested. Yet here was a lad who had convulsions every five minutes, where the œdema was so great as to make him scarcely recognisable by his nearest friends, and none at all while the process of reducing him to rational dimensions was in active progress; and I recall the case of a youth in this hospital where the œdema and the rapidity of absorption were greater than I have ever seen either before or since, where it was impossible to see the pupil of one eye because of the swelling of the face, and where the amount of urine rose in three days from 37 to 177 fluid ounces in the 24 hours, but where there was not the slightest convulsion. Equally conclusive also is this case against the assumption made by the same author that the urine in these circumstances *constantly* becomes alkaline within 24 hours. "I think it likely," such are the exact words used, "that the urea in highly albuminous urine in this and other cases rapidly undergoes ammoniacal decomposition, and that it is for this reason that the entire urine collected over 24 hours shows so constantly this alkalinity." But this lad's urine is *very* albuminous; it contains 2·3 per cent. of urea; it has been in my testing room, partly in a bottle and partly in a urine glass simply covered with paper, for 12 days and yet it is not in the least degree decomposed nor has it lost any of the acidity which it had when I took it from the patient's room. Indeed, so entirely free is it from any trace of decomposition that one might have thought some antiseptic had been added to it. If any antiseptic is present it must be one that was formed during the abnormal chemical processes which constituted the disease, and this may or may not have been the case. We have no evidence one way or the other, but I have as much reason for saying that in uræmic convulsions an antiseptic of a highly toxic and convulsivant nature is formed—a proposition which I should by no means like to advance—as the author in question has for speaking of the *constant* alkalinity of albuminous urine. Indeed, I think I may have more reason as I not infrequently find that the urine passed next after epileptic convulsions remains undecomposed for a long time. I have one sample in my testing room now which was passed in April, 1904, and is yet acid and entirely undecomposed.

Lastly, I will direct your attention to a case which I think you have all seen; and I do so not so much because it illustrates any particular kind of treatment, though one phase of it has a practical bearing on treatment, as because it points to the necessity of acquainting yourselves thoroughly with facts and of not allowing yourselves to be argued out of them on any consideration whatever.

CASE 5.—On Feb. 17th, 1905, a sailor, aged 43 years, was brought to the hospital from the Sailors' Home. Dr. Salisbury, the senior house surgeon, saw him at once and found pleuritic friction in the left axillary region, dulness of the right pulmonary base, general congestion of both lungs, a swollen and acutely painful right shoulder-joint, great distension of the abdomen, and a large slough on the anterior part of the tongue. When I saw him an hour or two later I verified all these facts. They were all, except the abdominal distension and the lingual ulcer, much intensified on the following day, when for the first time I learned that he had been admitted to the Sailors' Home on the 13th, had gone to bed in a state of intoxication, had turned on the gas without lighting it in a small room of between 500 and 600 cubic feet capacity, and had been found by the night watchman some considerable time later unconscious and all but asphyxiated; that he had been removed to the passage and artificial respiration practised for three hours, at the end of which time he was sufficiently restored to be replaced in his bed. On the 17th he was brought to hospital in the condition wh ch I have mentioned. The extreme pain in the right shoulder and the slough at the tip of the tongue were presumably caused by drawing the tongue forwards with forceps and by the forcible movements of the arms in performing artificial respiration. The abdominal distension was at once relieved by the use of a turpentine and asafœtida enema consisting of half a drachm of asafœtida and one ounce of oil of turpentine in a pint of warm starch. The patient died at 11.30 P.M. on the 18th. At the post-mortem examination which was made as usual by the pathologist, Dr. J. L. Dimond, all the facts disclosed by examination during life were verified—viz., consolidation of the lower half of the right lung, extensive pleurisy with large flakes of adherent lymph on the left side, and general pulmonary congestion. This condition in a man who had gone to bed intoxicated six days before and who had added the poison of coal-gas for several hours to the poison of alcohol, and, lastly, had had the merciful but necessarily somewhat rough discipline of artificial respiration employed for three additional hours, was quite enough to account for his death. During the examination I was surprised to hear that the coroner, who had, of course, been communicated with, had expressed a desire that the honorary physician should attend to give evidence as well as the senior house surgeon, whose attendance in ordinary circumstances is alone required, and on the following morning I received a formal summons. Happily, a casual expression made use of by one of yourselves in the post-mortem room to the effect that the gas company were to be represented at the inquest and that there was a fear that the man might have died from carbon monoxide poisoning due to the inhalation of water gas supposed to be mixed largely with the coal-gas supplied to the district caused me to return to the body and carefully re-examine all the facts so as to ascertain any evidence bearing upon this point. I could find none and I am quite at a loss to conceive how the idea could have originated. There was no cherry-red colour of the mucous membranes of the lips, &c. The livid patches on the skin were just such as are found in other cases. The blood, if it differed in any respect from that of a patient dying in other circumstances, did so in being somewhat darker rather than brighter in hue. I show you here some that has been largely diluted side by side with some equally diluted but obtained from another body and I think you will all recognise that it is somewhat darker. Lastly, I had just time to submit it to spectroscopic examination and I found nothing whatever to countenance the idea that it contained a large proportion of that gas. I show you here a drawing of the spectrum of blood containing carbon monoxide. The absorption lines and bands between D and E and the absence of these far beyond F are pretty distinctive. I examined it carefully with the double prism Browning spectroscope with which I work and I saw no evidence whatever to support the hypothesis that the man had been poisoned by carbon monoxide. If he had been picked up in the open street with signs and symptoms such as he presented when admitted he would probably have died and his death then would have been attributed to natural causes. "But might not carbon monoxide have accelerated his death?" was one of the questions then put to me. The reply was that there was not the slightest appearance either during life or post mortem of his ever having breathed any considerable proportion, or indeed any at all, of that gas. I agreed, of course, that to put a drunken or even a sober man into a bedroom not much if any larger than an ordinary closet and then to turn the unlighted gas on for a long space of time was not a proceeding likely to improve his health; but all the questioning and cross-questioning to which I was submitted failed to elicit an opinion that the man had breathed anything more injurious than ordinary coal-gas. After having firmly maintained this opinion it was some satisfaction to me to hear from the next witness, a responsible representative of the Liverpool Gas Company, that no water-gas whatever was at that time being supplied to the district in which the sailors' home is situated; and I could not help wondering how I might have felt if after manifesting an extraordinary amount of acumen in pointing out the subtle distinctions by which this poor fellow could be proved on scientific evidence to have suffered from water-gas poisoning I had heard it established on oath and beyond the possibility of doubt that he could not have breathed any.

The Lumleian Lectures
ON
NUTRITION AND MALNUTRITION.

Delivered before the Royal College of Physicians of London on March 28th and 30th and April 4th, 1905,

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LECTURE II.[1]

Delivered on March 30th.

MR. PRESIDENT AND GENTLEMEN,—Passing now to consider a little more in detail the changes undergone during digestion and subsequent absorption of the different alimentary principles, it will be found that the general result of the hydrolysis is to convert the normal substances into bodies somewhat less complex in character but becoming at the same time more diffusible. Such changes therefore are destructive or analytic in nature. Inasmuch, however, as it is most certain that the materials as presented for assimilation by the bioplasm are not (with few exceptions, chiefly among the inorganic ingesta) in the form in which they occur in the food, nor even as they are after undergoing digestion in the alimentary canal, some further changes must be undergone by them, somewhere between the surface of the gastro-intestinal epithelium and the living cell into which they will be incorporated, and these changes for the most part are of a synthetic character. Whatever may be the nature of the agencies by which these latter changes are effected, it may be said that those which take place in the alimentary canal are fairly well understood and are capable of more or less exact imitation in our laboratories by well-recognised chemical methods, while those changes which commence with the gastro-intestinal epithelium, though possibly and even probably of the same nature, are not so readily imitated by the means at present at our disposal, and that with the absorption of the digested material the direct influence of living protoplasm is for the first time brought to bear on the aliment. At the same time it is admitted that the digestive processes themselves are effected by the products of bioplastic activity—viz., the ferments—and it may well be that after all the subsequent elaboration of the nutriment is effected by similar agencies.

THE DIGESTION, ABSORPTION, AND DESTINATION OF PROTEIDS.

First as regards proteid digestion. In whatever form these bodies are presented to the digestive organs, whether as albumins, globulins, fibrins, &c., they are converted into a diffusible condition by the pepsin of the gastric juice acting in association with hydrochloric acid and by the trypsin of the pancreatic secretion in the presence of an alkali. I am not now concerned with the different views taken as to the nature of the several stages of decomposition which these proteids undergo, it is sufficient for my present purpose to understand that it is mainly into albumoses and peptones that proteids are converted. Whilst we are ignorant of the exact composition of the different members of this group it is impossible to say precisely how the peptones differ in their chemical structure from the proteids whence they have been derived nor what different kinds of albumoses and peptones there may be. It is by their physical characters that they are distinguished, by their non-coagulability, by their differences in diffusibility—i.e., size of molecule—and in precipitation by ammonium sulphate, as also by their fractional heat coagulation.

Although it is the case that in the normal process of proteid digestion the hydrolysis by the gastric ferment does not proceed beyond the stages of proteoses and peptones and that a much further cleavage takes place by the action of trypsin, whereby a large proportion of the ingested proteids are ultimately decomposed into much simpler crystalline substances, represented by leucin and tyrosin, and other amido-acids, as well as lysine, lysatine, argenin, and a body called tryptophan, it is not to be supposed that the difference is other than one of degree, for under certain artificial conditions outside the body the pepsin action may be made to effect very nearly the same ultimate results as the pancreatic enzyme. It may be observed, however, that the extent to which the peptones and albumoses are further split by the trypsin is much greater when those bodies have been formed by gastric digestion than when the pancreatic ferment works straight away upon native proteids. This, so to say, natural trend of the proteolytic enzymes is an important fact. If also it is recollected that neither proteoses nor peptones are to be found in the portal vein and that if such bodies gain entrance to the circulation they are at once eliminated by the kidneys, and also that the amido-acids are not found in normal fæces or urine, the question of the form in which the proteids are absorbed into the circulation comes to assume one of considerable interest if not difficulty. At least it cannot be that the general character of the changes which intervene between the proteids as ingested and as they are ultimately presented to the bioplasm consists merely in a series of transformations among closely allied bodies, such, for instance, as is in great measure the case in connexion with the carbohydrate digestion and assimilation. The changes in the proteids clearly extend over a much wider range than that and further, having regard to the fact that the proteid constituents of the tissues are by no means identical with those taken as food, it is clear that synthetic processes of an extensive character are involved. At first sight it would appear that a decomposition of the nitrogenous aliment into bodies so much less complex as the amido-acids are, as a preliminary to their reconstruction into tissue constituents of even greater complexity, is a wasteful exhibition of energy, but a comparison of the calorie value of these amido-acids with that of the proteids from which they have been obtained shows that only a very slight loss of energy has been sustained. Some of the difficulty in connexion with this subject has been cleared up by the discovery by Otto Cohnheim of a ferment in the cells of the intestinal epithelium to which he has given the name of "erepsin," and by this agent the albumoses and peptones which are absorbed are split up into cleavage products such as amido-acids, in which form the bulk of the nitrogenous ingesta passes into the blood and so to the liver.[2]

That the end products of tryptic digestion can be made available in the economy has been shown by dogs in a state of nitrogenous equilibrium if fed on these bodies still maintaining that equilibrium, showing that proteids need not retain their characteristics to be available as food and that their cleavage products can supply the essentials for tissue nutrition. In those conditions where a transference of the proteid constituents of some tissues to others takes place it seems probable that their passage takes place in the form of cleavage products and not actually as proteids. Such, for instance, in starvation when a great loss of the systemic muscles occurs and also of glands rich in proteid matter, whilst but little loss takes place in vital organs like the heart, the muscular tissue of which is maintained at the expense of these other structures. To effect this transference of proteids from one tissue to another it is clear that they must be rendered soluble and diffusible; in other words, digested and the wide distribution throughout the tissues of proteolytic ferments and also, as Dr. Vernon has shown, of erepsin,[3] would seem to suggest that it is by their agency as in the intestine that the change is effected. Support for this view is also to be found in plants, since "in vegetable metabolism the amides have been shown to be antecedents of proteid or to take part in its construction disappearing from the cell as proteid is formed."[4]

There has always been a considerable difficulty in accepting the view that the absorbed peptones and albumoses were retransformed into coagulable proteids such as serum globulin and serum albumin in their passage through the villi to the blood current, for among other reasons it is known that in starvation the circulating proteids in the blood are but very slightly diminished in amount, in

[1] Lecture I. was published in THE LANCET of April 29th, 1905, p. 1111.

[2] Dr. Vernon, Journal of Physiology, December, 1903, has shown that the pancreatic secretion also contains erepsin, which is quite distinct from the trypsin, and that it differs somewhat from the intestinal erepsin.

[3] Journal of Physiology, December, 1904.

[4] Ferments and Fermentation, by Professor Reynolds Green, F.R.S. 1901.

marked contrast to the decrease of the tissue proteids, and were the former the nitrogenous pabulum they would be expected to disappear. Moreover, neither of these circulating proteids corresponds to the actual proteids of the tissues, in each of which a further special transformation would have to take place. But with a preliminary decomposition of the proteids into bodies of an altogether simpler character there is presented to each living unit the raw material, so to say, out of which each can synthesise for itself its own special constituent and this without, as already said, any material loss of potential energy. Further than this, there is some reason to believe that the proteid cleavage may proceed in the intestines beyond even the formation of the amido-acids, even to the splitting off of the nitrogen and formation of ammonia, and this would account for the large excess of ammonia which is found in the portal blood. It is not suggested that more than a small quantity of the proteid is split up to this extent and the non-nitrogenous moiety of the molecule probably serves as fuel in the course of the subsequent metabolism.

Although this account of the changes undergone by the proteids in the intestine represents the most recent views on the subject there have lately been made some observations which, so far as they go, are more in the direction of supporting the older views. It has for long been known that a milk-curdling ferment, rennin, is secreted by the stomach, and more recently it has been shown that a similar body is found in the pancreatic fluid. Besides its specific action upon the caseinogen it also has an action on the albumoses and peptones which it meets with in the intestine, altering them in such a manner as to increase the size of their molecules and so forming a colloidal body to which the name "plastin" has been given, that is intermediate between the albumins and the albumoses, and in an alkaline medium resembles a coagulable proteid and so differs from peptones. That is to say, there is here a synthetic change tending to raise the less complex non-coagulable albumoses to a higher stage of complexity towards that which obtains in the actual proteid construction of the tissues. Considerable difficulties surround the subject, not the least being the mode in which the absorption of this substance takes place and the doubt already referred to concerning the circulating proteids being assimilated by the protoplasm. May it be that the occurrence of rennin in the stomachs of birds and fishes where no milk-curdling takes place is connected with this additional action?

If now we endeavour to follow so far as we can the destination of the digested proteids we are at once struck by the fact already mentioned that if they be presented for absorption as albumoses and peptones these bodies are not to be found in the blood of the portal system, far less in the general circulation. Moreover, such bodies are extremely toxic in character and should they in any circumstances find their way into the blood current would be eliminated by the kidneys at once. Somewhere, then, in the passage of the digested proteids through the columnar epithelial cells or in the lymph of the underlying lymphoid tissue, whence they are absorbed into the portal blood, they are reconverted into coagulable proteids possessing no characters at present distinguishable from those of the normal blood. Everything points to this change, if it really occurs, taking place in the epithelial cells. If, on the other hand, it is in such form as leucin and tyrosin that the digested proteids are absorbed their passage into the blood offers no difficulty, but at the same time no special excess in the quantity of these substances is found in the portal vein, which is explained by the advocates of this view as being due partly to the difficulties connected with the quantitative estimation of these bodies in such fluids as blood, and partly to the relatively small quantity existent at any one time and the rapid disposal of it by the liver.

In passing, it may be remarked that a considerable difference exists in the extent to which the various proteids of the food are absorbed, dependent no doubt in great measure, if not wholly, on their digestibility (in the absence of any evidence to indicate a selective power of absorption by the epithelium). Thus, vegetable proteids—probably from their association with cellulose and other materials—are commonly less well absorbed than those of animal source, though by no means in all cases, and even among those of animal origin differences exist. At the same time it may be remarked that native proteids are capable of some absorption without change, and a still larger amount of alkali and acid albumin may be taken up without previous conversion into albumoses or peptones.

Passing on in the portal blood the liver is reached and the next question is what changes, if any, do the absorbed proteids undergo in that organ. On the more generally held view that the albumoses and peptones are reconverted by the intestinal epithelium into such proteids as are normally found in the blood, it is held that "the great part of the proteid which is absorbed from the intestine passes on through the hepatic veins into the general circulation without being stored or at once modified in the liver."[1] If, however, it is in the simpler form of such bodies as the amido-acids and their allies that the digested proteids reach the liver then it would seem probable that certain synthetic changes—comparable to those taking place in the kidney cells by which benzoic acid and glycocoll are synthesised into hippuric acid—are effected in a portion of them by the hepatic cells preparatory to their being assimilated by the protoplasmic molecule. On experimental grounds it is probable that the greater part of the amido-acids are converted into urea in the liver and if, as has been said, the bulk of the ingested proteids are split into these and allied substances during digestion and in the intestinal epithelium, then it would appear that the ordinary nitrogenous intake far exceeds the requirements of the body and gives support to the view which Chittenden's experiments indicated. Of the importance of the liver in the metabolism of proteids and strongly confirmatory of the view that it is as comparatively simple cleavage products that the digested proteids reach that organ is the fact that in acute and extensive destruction of the liver cells as occurs in phosphorus poisoning, yellow fever, and the like, leucin and tyrosin are found abundantly in the urine, being thus excreted, it may be reasonably supposed, since the liver had been unable to deal with them as it does in normal circumstances. Thus the function of the liver in this case resembles that in respect to the absorbed glucose, being to intercept the products of proteid and of carbohydrate digestion and either store them up as glycogen or synthesise the nitrogenous bodies into less diffusible albumins and globulins and so retain them in the economy, and on failure of hepatic function they would pass on unaltered and be excreted by the kidneys as sugar and amido-acids respectively.

The solution of the problem which concerns the mode in which the proteids are actually disposed of by the living tissues will depend in some measure upon our knowledge of the precise form in which these substances are presented for assimilation. Of the views most generally held hitherto one is that whilst a portion of the absorbed proteids are ultimately incorporated into the bioplasm—forming the so-called "tissue" (Voit) or organised proteid—whereby its growth and maintenance are effected, making up, that is, for the wear and tear, a large proportion never becomes an integral part of the living molecule which by contact—or as we should now say by ferment action—induced in this so-called "circulating" (Voit) or unorganised proteid katabolic changes akin to those determined in the fat and carbohydrate which are also associated in the protoplasm. By Pflüger, however, and with perhaps the more general support of physiologists, the whole of the proteid intake was considered to become bioplasm, leading to increased growth and metabolism of this material with production of body heat, of which the muscles are the chief source. If, however, the nitrogenous pabulum is presented to the bioplasm in a simpler condition than that represented by serum globulin and serum albumin, as we have seen reason to believe may be the case, in such a form as leucin, tyrosin, or allied substances, then a greater range of synthetic change is called for on the part of the living matter to render such bodies an integral part of itself.

The subject of proteid katabolism is one of exceeding complexity. Without doubt the most abundant nitrogenous waste-substance is urea and the amount excreted varies directly with the quantity of proteid food. Inasmuch, also, as the muscles form the great bulk of the proteid tissues it is from their waste that the greater quantity of the urea is derived. At the same time, however, it is pretty certain that the urea is not formed in the muscles but in the liver, which thus becomes an organ concerned in the katabolic processes of nutrition as it is with the anabolic processes that I have before said are to be regarded as in great measure coincident and mutually related. From this it would follow that some or all of the products of the disintegration of muscular tissue in the exercise of

[1] Schäfer: Text-book of Physiology, vol. i., p. 902, 1898.

its function must be conveyed to the liver, there to be converted into the urea which is excreted. These substances are included under the general term of extractives and consist of creatine and creatinine, uric acid, xanthin and hypoxanthin, &c. None of these bodies, however, is the immediate precursor of urea, the actual substance being a compound of sarcolactic acid, a constant result of muscular action, and of ammonia which is another product of the same. The ability of the liver to form urea from certain ammonia salts has long been known and there is very little doubt but that it is in this manner the muscle waste is disposed of so far as the nitrogenous part is concerned, the non-nitrogenous portion forming, as will be immediately seen, a carbohydrate, being finally eliminated as carbonic acid and water. That a large proportion of the urea excreted is formed by the liver from the leucin and tyrosin which have resulted from proteid digestion has already been mentioned.[6] Another important product of proteid decomposition is uric acid, concerning the origin of which under normal and abnormal conditions most diverse opinions have been held. Here it will suffice to say that its origin, as that of other purin bodies, is to be found in the metabolism of the nucleoproteids, and hence it is a product of nucleated cell activity such as occurs in secreting glands and the white cells of the blood.

THE DIGESTION, ABSORPTION, AND DESTINATION OF CARBOHYDRATES.

Having thus traced the proteid elements of the food from their ingestion to their presentation to the living cell it now becomes necessary to pursue the same inquiry in respect to the carbohydrate food-stuffs. Here the subject is somewhat easier though much still remains to be learned. In whatever form these constituents of the food are offered, whether as starch, dextrin, gums, or as cane sugar, milk sugar, or maltose, they are only assimilable in the form of glucose (dextrose, levulose, &c.) and for the most part are absorbed into the blood in this form. Should such substances as cane sugar or maltose gain entrance as such into the blood they are excreted by the kidneys and are not made use of. Inasmuch as the greater part of our ingested carbohydrates is in the form of starch or cane sugar it is clear that during their course through the alimentary canal they must undergo certain changes which result in their conversion into the glucose form. The nature and agency of these changes are fairly well understood and are briefly a succession of hydrolytic actions effected in the case of polysaccharides $(C_6H_{10}O_5)_n$ such as starch by the diastatic or ferment action of (*a*) the salivary ptyalin, which is carried on almost entirely in the cardiac portion of the stomach unless the act of chewing be excessively prolonged; and (*b*) of the pancreatic amylopsin, by which the bulk of the material is converted into the disaccharide ($C_{12}H_{22}O_{11}$) maltose, and subsequently the conversion of the maltose into the monosaccharide ($C_6H_{12}O_6$) dextrose by the inverting ferment of the succus entericus and, as appears to be very probable, by the action of the intestinal epithelial cells during the passage through them of the absorbed material The ingested disaccharides will, of course, only undergo the inverting action, a small amount of which may be effected by the acid of the gastric juice (comparable to the action of dilute mineral acids on cane sugar or maltose in the laboratory), as was shown by Ferris and Lusk,[7] the latter of whom has lately proved the absence of a cane-sugar inverting enzyme from the gastric juice.[8]

As with the digested proteids so the digested carbohydrates are absorbed by the epithelial cells of the small intestines and to a much lesser degree by those of the stomach, the rate of absorption being influenced by various circumstances, such as the degree of concentration, the rate of the blood current, and so on. I have just mentioned that these cells most probably exert an effect on the maltose, changing it into dextrose; as there is reason to believe they modify the other products of digestion as they pass through them. By the portal vein the dextrose is conveyed to the liver where it is partly reconverted by a process of condensation into a polysaccharide, glycogen, and stored as such in the hepatic cells; some passes through the liver and is laid up in the tissues, more especially the muscles, also as glycogen, though a considerable proportion, as will be seen, is converted into fat. It is further supposed that in addition to these destinations of the dextrose some enters into the construction of certain of the proteids and nucleo-proteids, forming within the molecule an atom group of the nature of a hexoglucose, the basis of what I referred to in my previous lecture as the glucoside theory of proteid constitution. Dr. Pavy has strongly adopted this view and has shown that from many proteids—though not from all—a body of glucose character can be obtained on treatment with caustic potash as it was previously known could be effected by dilute acids. That such a notion as to the destination of part of the carbohydrate intake is highly probable might be inferred from the fact that within the body the proteids—or at least some—are the source of some of the carbohydrate nutriment. It is well known that glycogen continues to be formed in animals who are fed on a diet absolutely free from carbohydrates and it is almost certain that the fat is not the origin of this substance; there remains only then the proteid aliment as a source. Some of this proteid-derived carbohydrate, like that ingested, may be stored up as glycogen and some may be circulated as dextrose and consumed without condensation into glycogen. That plants such as yeast cells may synthesise proteid matter from sugar, ammonium nitrate, the ash of yeast, and water is established, thus showing that carbohydrate matter is incorporated into the proteid in the course of its construction, and correspondingly from the proteid the carbohydrate may be split off in certain circumstances to be used up in the tissues.

There is, then, but little evidence of synthesis of carbohydrates within the animal body, whether from the food constituents or from any products of decomposition of tissue elements; such anabolic changes as do occur in these substances are of the nature of transformation among isomeric substances or of condensation of various saccharides effected by various enzymes each adapted to the special change required. This is in marked contrast to what obtains in plants, where a most extensive formation of starch, sugars, cellulose, and allied substances is effected by the synthesis of much simpler bodies of which carbonic oxide and water are the chief, or sometimes even of the elements themselves.

It is as glucose that that portion of the carbohydrate ingesta not converted into fat is ultimately used by the bioplasm, the stored glycogen being reconverted for that purpose, and the decomposition of the sugar in the muscle is effected by a ferment, which may be extracted in the muscle juice, acting in conjunction, as Otto Cohnheim has shown, with a probable ferment body formed by the pancreas and thrown into the general circulation in a manner comparable to the combination of enterokinase and trypsinogen already described. The final products of the destruction of the carbohydrates are carbonic acid and water which are excreted by the ordinary channels but there is reason to believe that among the intervening products of oxidation are lactic acid, alcohol, and aldehyde.

THE DIGESTION, ABSORPTION, AND DESTINATION OF FATS.

The fats of our food, derived as they are from both animal and vegetable sources, differ somewhat, but not entirely, from the chief fats found in the body—viz., tripalmitin, tristearin, and triolein. However fine the emulsion may be in which they are presented to the intestinal mucosa for absorption the molecules are still too large to pass into the epithelial cells on their way to the lacteals. It is almost certain that it is not in this form that the fats are absorbed for, among other reasons, although fat granules and globules are abundantly to be seen in the interior of the intestinal epithelial cells during digestion, they are never to be found in the striated border of those cells. Everything points to their being saponified, that is, split up into glycerine and fatty acids, the latter uniting with alkalies in the intestine to form soaps. These, which are moderately soluble, are absorbed together with the glycerine, to be reconverted into neutral fats within the epithelial cells, whence the particles and globules are conveyed by leucocytes into the lacteal radicles in the villi, finally to reach the thoracic duct. In the most favourable circumstances it is only a part of the absorbed fat which ultimately reaches the circulation; a considerable amount is in some unknown way disposed of *en route*, possibly in the lymphatic glands.[9] The effective agents in bringing about the saponification of the fats in the bowel are the alkaline bile and pancreatic juice, the latter of which contains a special fat-splitting ferment—steapsin. Although the exclusion

[6] A ferment—argenase—has been found in the liver and other organs by which argenin, one of the products of proteid cleavage, is converted into urea.

[7] American Journal of Physiology, 1898.

[8] Ibid., February, 1904.

[9] Schäfer: Text-book of Physiology, vol. i., p. 462.

from the intestine, either artificially or by disease, of these two secretions is followed by the presence of fatty matter in the stools it is chiefly in the form of fatty acids that fats are there met with, showing at least that the presence of these juices is not wholly essential to the fat-splitting, however important may be their influence in saponification and still more in facilitating the absorption of these materials. It seems that some fat-splitting occurs in the stomach, though much less than what takes place in the intestine, but very little formation of soap, however, takes place in that organ.

Inasmuch as a great part, often the greater part, of the fats of the food differs somewhat in composition from the fats found in the body it would follow that if the former be the immediate source of the latter they must undergo some change. Moreover, it is by no means certain that such ingested fat as does correspond to that of the body directly goes to form the fat as it occurs in the tissues. That it may do so, however, appears possible from the fact that fats which do not normally occur in the tissues may yet be found there when administered with the food. Ordinarily fats form but a small proportion of the total ingesta but they constitute a very considerable part of the body weight and are the chief reserve store of potential energy. It is clear, therefore, that there must be some other source or sources of this material than that contained in the food and this is to be found chiefly in the carbohydrates from which it is well known the body fats are largely derived. Fat synthesis, therefore, becomes an important factor in nutrition. That there is a synthesis is obvious from what has just been said of the digestion of fats; the fatty acids and glycerine into which these substances are split up in the intestine for purposes of transference are re-combined in the epithelial cells to form the fat which is in great part stored. It has also been found that dogs fed upon fatty acids only were nevertheless able to lay up neutral fats, the synthesis in this case not only combining the acid and glycerine but also forming in some way not known the glycerine itself. It has been recently held that the fat-splitting enzyme or lipase which acts upon the fats in the intestine is the same agent that effects the condensation of the results of the cleavage—viz., the glycerine and fatty acid, an instance of what is termed "reversible action."[10]

As to the manner in which carbohydrates are converted into fats precise information is wanting, but it appears probable that it is the products of disintegration of the former that are synthesised. Among those products it will be remembered that lactic acid is prominent and that the same substance is formed from sugar of milk by an organism and is the well-known cause of milk "turning sour." Similarly butyric and caproic acid, lower terms of the fatty acid series, are formed from carbohydrates by another organism, lactic acid being first produced from glucose into which the carbohydrate is previously converted. The work of Leathes and others has shown it to be most probable that it is in the liver that the lactic acid is changed into butyric acid, as also that it is in the same organ that the butyric acid is built up into a higher term of the same series and that from the carbohydrates of the food first converted into glucose, and possibly from the glycogen of the tissues also converted into glucose, the several fatty acids—palmitic, stearic, and oleic—are in great part derived. Similarly, in the seeds of some plants oils are formed at the expense of the starch. Most probably also the glycerine with which the acid forms the neutral fat is derived from the sugars. In alcoholic fermentation of sugar by yeast this substance is known to be formed, which suggests an origin of a similar nature in the body.

It would be impossible in connexion with the origin of fat from carbohydrates to avoid reference to the views so ably advocated as the outcome of an almost life-long experimental study of the subject by our distinguished Fellow, Dr. Pavy. According to him a large proportion of the glucose resulting from the digestive changes in the carbohydrate food is stopped from entering the portal blood-stream by the intestinal epithelium, in the cells of which it is converted into fat, and in that form enters the lacteals. Such as escapes is condensed into glycogen in the liver, which in its turn is normally transformed into fat and not into sugar. Dr. Pavy considers that it is by the protoplasm of the cells that this conversion is effected and inclines to the view that the glucose becomes a constituent of the protoplasmic molecule previously to its giving rise to fat. I am not concerned to criticise this view; it is sufficient for my purpose to refer to it as indicating the very extensive transmutation of carbohydrate into fat that is held by some as normally taking place.

As to whether fats may be formed from proteids of the food or of the tissues the most opposite views have been held. At the one extreme was Voit who maintained that they were almost if not entirely so produced, and that even the carbohydrates did not give rise to them. The proteids, it was said, were so split up as to form a nitrogenous moiety which was thrown off as urea, the remaining portion consisting of carbon, hydrogen and oxygen only being stored as fat. That this was going too far was proved by the classical experiments of Lawes and Gilbert, by which the carbohydrates as being the chief source of the body fat was proved. It was still a question, however, whether any fat was formed from proteids and up to the present day it has generally been conceded that there is. The teaching of Virchow in respect to the fatty degeneration of proteid tissues has gone far to maintain this view. Quite lately, however, this explanation has been called in question, chiefly from the experiments of Rosenfeld, and there seems to be good reason to believe that in all cases of so-called "fatty degeneration" the fat is really transferred as such from some fat depot—adipose tissue or other—though admitting the possibility of a small amount being formed from the fat which is combined with the protoplasmic molecule or from such bodies as protagon and lecithin which are intimately associated with the proteid, but that in no case is fat a product of proteid degeneration.[11]

The katabolic changes which the fat undergoes are those of oxidation into carbonic acid and water without so far as is known the formation of any intermediate bodies, the combustion being complete. Most of the disintegration takes place in the muscles with the liberation of heat and chemical energy with transformation of the latter into muscular work.

A survey of the foregoing account,[12] necessarily brief, of the changes undergone by the ingesta subsequently to their digestion in the alimentary canal suggests several points for consideration, first among which are the conditions attendant upon their absorption by the intestinal epithelium. These cells, to which formerly was attributed the sole function of permitting the passage of the diffusible gastro-intestinal contents, are now seen to be possessed of powers of high metabolic value apart even from those scarcely less important which are concerned with the production of such a stimulus to pancreatic secretion as secretin or the actual formation of a special fluid, the succus entericus, with its specific powers. Upon two groups at least of the digested food-stuffs do these tissue elements effect an important change: the proteids are broken up into much simpler substances—amido-acids and allied bodies—and the fats which to permit of absorption had been split into their constituent acids and glycerine are re-formed by them. Upon the glucose into which the ingested carbohydrates have been converted less unanimity of opinion prevails; whilst some consider the sugar passes through unchanged into the portal blood, others with Dr. Pavy consider that this is prevented by the change into fat undergone by the glucose in these same epithelial cells.

[10] Hanriot: Comptes Rendus, vol. cxxxii., 1901.

[11] An interesting summary of the evidence bearing on this point is given in a paper by Dr. Christian of Boston in the Johns Hopkins Hospital Bulletin for January, 1905. On the other hand, it is generally admitted that fat is formed by certain micro-organisms, especially the bacillus tuberculosis, to the large quantity of fat contained in which microbe its resisting power has been in great measure ascribed (Levene: Journal of Medical Research, 1904). Some experiments in this direction have been made with the bacillus pyocyaneus which was found to form appreciable amounts of fat from peptones. This showed that free sugar could not be the source and as there was no fat in the medium it could only have come from the proteids. It was found that there was more formed than could be ascribed to the carbohydrate nucleus of the proteids and that consequently it must have been derived in part, at least, from some cleavage product or products other than the carbohydrate portion (Beebe and Buxton: American Journal of Physiology, vol. xii., No. 5, 1905).

[12] I have not thought it necessary in this account to take into consideration the action of micro-organisms in the alimentary canal upon the ingesta. That they are not absolutely necessary to the maintenance of normal nutrition has been demonstrated and that they may be directly or indirectly connected with the setting up of various forms of toxæmia as the result of their decomposition and putrefactive products is most probable. In health they perhaps supplement to a slight extent the ordinary digestive changes, but it is most likely that the greater part of the results of their activity are excreted in the fæces or, after absorption, in the urine.

Another feature which stands out from our more precise knowledge of these processes is the relation of the liver to the several groups of materials brought to it in the portal vein. In respect to few organs of the body have opinions so much varied from time to time as they have in regard to the functions of the liver, and although we cannot yet speak precisely as to what changes may be effected by the hepatic cells in the proteid products of digestion, if, indeed, any change be effected, we clearly recognise that glucose is stored partly as glycogen and partly as fat, the synthesis of the fatty acids having been shown to take place in this organ. From the katabolic side the liver also occupies an important position, since it is in that organ that the chief nitrogenous excreta are synthesised into that form in which they are finally eliminated.

The more accurate realisation of the metabolism of the food-stuffs leads to a wider conception as to the nature of the pabulum as offered to the living matter and the relative importance of the several constituents. Such proteid synthesis as takes place is concerned with some of the products of proteid destruction in the course of their elimination. But certain portions of proteid cleavage become utilised as fresh food, whether it be in carbohydrate form or as fat. From the former of these the chief bulk of the latter is constructed but there is no conclusive evidence to show that the reverse takes place and that sugar may be derived from fats. Thus the residues of katabolism, whilst in part eliminated as waste, partly go to form those materials which play an important part in the economy, whether as internal or as external secretions, and are to some extent synthesised into the integral constituents of living matter.

Even yet more important is the recognition of the fact that the pabulum, whether proteid, fat, or carbohydrate, is ever in a state, as it were, of flux, now stored up, now transferred elsewhere, again perhaps to be stored up before it undergoes its final changes and is eliminated. To enable the laid-up materials to undergo this translocation they must be rendered soluble for conveyance in the blood or lymph streams and this is done by the agency of ferments of the same nature as those the ingesta met with in their process of digestion in the alimentary canal. The occurrence within the living cells both animal and vegetable, of ferments which are capable of digesting the cells is almost if not quite universal. Such autolytic enzymes are proteolytic in action and hence must be largely concerned in the ultimate proteid metabolism. If they be regarded as possessed of reversible power it would follow that by their means is maintained "a nitrogenous equilibrium within the cells, building up and breaking down proteids as circumstances require."[13] Reference has already been made to the widespread occurrence throughout the tissues of erepsin. So also a glycolytic enzyme is to be found in muscles and elsewhere; and lipase with its reversible power has been met with in a number of tissues, especially when fat synthesis occurs, such as the mammary gland when active and adipose tissue, also, too, in the liver and blood.

(To be continued.)

TEN ABDOMINAL SECTIONS FOR ABNORMAL PREGNANCIES AND OBSTRUCTED LABOURS.[1]

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HAD a surgeon 20 or 30 years ago ventured to read a paper to this society on questions affecting pregnancy and labour he might have been arraigned for trespassing on the preserves of the obstetrician and general practitioner; if in his paper he had discussed a series of abdominal operations performed during pregnancy a further charge of malpraxis would surely have been preferred against him. But the pregnant uterus is no longer a *noli me tangere* to the surgeon, for it and its adnexa are now attacked for myoma or inflammatory tumour with little risk to mother or fœtus. The surgeon, moreover, can now legitimately claim to have a professional interest in complicated pregnancy and labour, for it is through his work that obstructed labour and ectopic pregnancy have lost many of their terrors. True it is that these complications are uncommon. Infrequency is the cause of their being forgotten and their study neglected. It is also my apology, if such be required, for bringing before you ten cases of abdominal section for obstructed labours and abnormal pregnancies which have occurred in my practice. A discussion on this subject should be valuable, not only from its scientific interest but also from its practical application, in so far as it may lead to a determination of what is possible and proper in the treatment of these emergencies, which require immediate recognition and skilled interference.

For the sake of clearness and to facilitate discussion I have divided the cases as follows: (1) two cases of ovarian tumour obstructing labour; (2) two cases of uterine fibroid, the one obstructing labour, the other complicating pregnancy; (3) four cases of extra-uterine pregnancy; (4) a case of tumour narrowing the pelvic outlet and necessitating Cæsarean section; and (5) a case of omental adhesions disturbing pregnancy.

1. *Ovarian tumours obstructing labour.*—A discussion on the removal of ovarian tumours during pregnancy was held by this society in 1897 on a case reported by me. Since that time this question has been much under review and it is to a member of this society that the profession is indebted for the most valuable and complete work on the subject. Dr. R. G. McKerron, in his book on "Pregnancy, Labour, and Child-bed with Ovarian Tumour," has, after a laborious collection and masterly analysis of 1290 recorded cases, deduced certain rules for our guidance which have met with general approval and acceptance. For a full description of ovarian tumour, so far as it complicates pregnancy and the puerperium, I must refer you to Dr. McKerron's excellent monograph. The treatment, however, of ovarian tumour obstructing labour may fitly engage our attention for a short time to-night. It is summarised in the following conclusions, which I quote: 1. Ovariotomy is the best treatment and should be preferred when the patient can without delay be placed under the charge of an experienced operator. The abdominal is in general to be preferred to the vaginal route. 2. When time or place does not admit of ovariotomy reposition should be attempted but the effort to push up the tumour should neither be too forcible nor too prolonged. 3. In the majority of cases it will be possible to deal successfully with the complication by one or other of these methods. When both are found impracticable no time must be lost in carrying out the measures which circumstances dictate. The greatest danger is in delay. 4. The tumour should be either aspirated or preferably incised; when incised it should be stitched to the vaginal wall if time permit or, which is better, it may be evacuated and plugged with iodoform gauze. Both these measures are temporary and should be followed by ovariotomy as soon as possible after labour. 5. When the tumour is solid or semi-solid and only partially reducible by incision an attempt must be made, no matter what the circumstances, to remove it by the vagina or by the abdomen and if this fail Cæsarean section must be performed. In the hands of even an inexperienced operator this will involve less danger than an attempt to drag the child past the obstruction with the forceps. 6. Version is in all circumstances contra-indicated. Forceps or craniotomy must never be employed unless the obstruction has been completely removed. 7. In the abdominal operation for the removal of the tumour Cæsarean section should rarely be necessary. In almost all cases it will be possible to deal with the tumour by first drawing the uterine fundus through the abdominal wound or by getting an assistant to push the tumour up from the vagina, while the uterus is simultaneously pushed by the operator to one or other side of the pelvic brim. 8. Tumours which have been reposed or incised during labour must be removed as soon as possible in the puerperium.

The frequency of ovarian tumour complicating pregnancy is about 1 in 2500 cases. The maternal mortality in obstructed cases is about 25 per cent. over all the series; that of the children nearly 50 per cent. One-fourth of obstructing ovarian tumours are dermoids.

CASE 1. *Dermoid cyst obstructing labour, removed during subsequent pregnancy; recovery.*—The patient, married, aged

[13] H. G. Wells: On the Relation of Autolysis to Proteid Metabolism American Journal of Physiology, 1904, vol. xi.

[1] A paper read before the Medico-Chirurgical Society of Aberdeen on April 6th, 1905.

30 years, was attended at her fifth confinement in August 1895, by Dr. McKerron. For some time before labour set in she had been troubled with down-bearing pain and irritability of the bladder. Dr. McKerron discovered when the os was half-dilated that "the posterior vaginal wall was occupied by a flattened fleshy mass of about the size and thickness of a well-developed placenta." He found it impossible to remove the obstruction, but with the assistance of Professor W. Stephenson succeeded, under deep anæsthesia, in raising the tumour above the brim, when a living male child, considerably over the average size, was delivered with the forceps. I saw the patient six weeks after her confinement and operation was advised. She, however, did not arrange to come to the infirmary till ten months later when it was found that she was three and a half months pregnant. A dermoid cyst of the right ovary, weighing 1 pound 12 ounces and with a very long pedicle, was removed in August and the patient made a good recovery, being delivered of a living female child the following January.

CASE 2. *Dermoid cyst obstructing labour; reposition; operation during puerperium; recovery.*—(For the notes of this case I am indebted to Dr. Thomas Fraser.) The patient, aged 27 years, who was eight months pregnant, complained one afternoon in September, 1903, of a very severe vertex headache which lasted a short time and disappeared after a brisk walk. The next afternoon she was seized with severe headache and suddenly went blind. She was seen by a locum-tenent who found her able to perceive light but she could only recognise that he was a stranger from his voice. The urine was examined and found on boiling to be almost solid with albumin. In the evening she had two severe convulsions for which one drachm of chloral hydrate was administered per rectum. She had no more convulsions. Labour started on the next morning and went on slowly. A tumour was found on the left side a little in front of the head. It could at first be pushed up but as labour progressed this could not be done. Professor Stephenson saw the patient in the evening and under chloroform reposition of the tumour and delivery by forceps were easy. The albumin in the urine diminished but there was slight elevation of temperature for a day or two. She went to the Royal Infirmary on the fifth day after delivery and on the eighth day had a left dermoid cyst removed by me. The tumour was lying in the pelvis and was flattened from pressure. Albumin was present in the urine for a day or two before operation but it disappeared thereafter and the patient made an uneventful recovery. In the beginning of December, 1904, she aborted at five and a half months, and at that time a tumour was felt on the right side of the abdomen. She was examined under an anæsthetic by Dr. Fraser and the tumour was diagnosed as a dermoid cyst of the right ovary which was found to be healthy at the first operation. This tumour was removed by me on Saturday last. You will see it is a dermoid cyst of about the size of an orange and containing much hair and one if not more teeth.

2. *Uterine fibroids complicating pregnancy.*—Bland-Sutton has, under the title "The Inimicality of Pregnancy and Uterine Fibroids," described the harmfulness of the association of these two conditions as being of three kinds: (1) obstructive; (2) septic infection; and (3) degeneration of the fibroid. The most extreme examples of the red degeneration described by Fairbairn occur in pregnancy, An examination of the literature on the subject shows considerable difference of opinion as to the tendency to abortion, the interference with labour, and the necessity for operative intervention in pregnancy with fibroid tumour. Kelly's statistics seem to show frequent abortions as the result of the combination, while many observers, mostly continental, have found the reverse to be the case and maintain that operation is seldom required.

Dr. A. Donald of Manchester, in an excellent paper on this subject published in the Transactions of the Obstetrical Society of London, vol. xliii., 1901, gives his conclusions as follows. 1. In the great majority of instances in which fibromyomata of the uterus and pregnancy coexist the course of the pregnancy and of the subsequent labour is not seriously influenced by the tumour but in a small proportion of cases the patient's life and the life of the child are seriously endangered. 2. When pregnancy is found to be complicated by fibroid tumour it is best to allow the pregnancy to go to term as long as the mother's health is not seriously endangered. 3. If at the outset of labour or shortly before it seems certain that the tumour will cause obstruction to the birth of the child Cæsarean section followed by hysterectomy should be performed. 4. In cases in which the health of the mother makes it necessary to interfere in the earlier months abdominal section should be performed and an attempt made to enucleate the tumour. 5. If in these circumstances myomectomy is found to be too dangerous hysterectomy should be performed.

CASE 3. *Uterine fibroid obstructing labour reposed after cœliotomy; recovery.*—The patient, aged 44 years, was admitted to the infirmary in June, 1902, at the request of Dr. Gibo and Professor Stephenson. She was in labour and the labour was obstructed by a tumour which they diagnosed as a myoma. The tumour could not be reposed and it was thought that Cæsarean section would be necessary. On opening the abdomen a myoma of about the size of a cocoanut was found impacted in the pelvis. I found it quite impossible to get the tumour up past the pelvic brim and it was only after enlarging the incision up to the xiphoid and lifting the uterus out of the abdomen that sufficient space was given for the raising of the obstructing fibroid out of the pelvis. While the uterus was swathed in warm sterile towels Professor Stephenson put on the forceps and speedily effected delivery. After the placenta had been expressed the large abdominal wound was sutured. The recovery was uneventful. The age of the patient and her history decided me in not removing the fibroid, an operation which would only have added to the risks of the puerperium.

CASE 4. *Pregnancy with large fibroid and adhesions; Porro-Cæsarean section; recovery.*—The patient, aged 42 years, was sent to me in August, 1903, by Dr. S. C. Ironside of Fochabers. She had a large abdominal tumour and Dr. Ironside suspected either an ectopic or a complicated pregnancy. On examination I found that she was pregnant about seven months and that the state of affairs was normal except for a large tumour lying in the abdomen to the left of, and attached to, the enlarged uterus. This was diagnosed as either an adherent dermoid cyst or a myoma and as it was painful and a likely source of danger it was decided to operate. This I did on August 29th, when I found the tumour to be a fibroid. From its relation to the uterus and parietes it was thought best (a view with which Professor Stephenson agreed) to remove the tumour and gravid uterus. Supravaginal hysterectomy was done and she was dismissed three weeks later. Koeberle's serrenoeud was used, an instrument which I have found very useful in those hysterectomies in which rapid operating is advisable.

3. *Extra-uterine pregnancies.*—The recognition of this condition in its early stages is not easy. In the later months though the diagnosis does not present much difficulty the exact line of treatment has to be determined according to the peculiarities of the case. There is not absolute agreement among gynæcologists as to the "how" and "when" of the operation. Werth has stated that during the early months extra-uterine pregnancy must be treated as if it were a malignant growth. In ruptured tubal gestation with active bleeding the indications for operation are as clear as in the case of a severed artery. In pelvic hæmatocele (intraperitoneal) or the subperitoneal hæmatoma between the layers of the broad ligament some advise operation as the routine but the consensus of opinion is in favour of expectant treatment unless the absorption is slow or a tubal mole or abortion coexists. This waiting involves a considerable period of invalidism and certain risks. Among these a common sequela is suppuration and this is best met by vaginal incision and drainage.

Ectopic gestation after the fourth month demands special consideration, as authorities differ on certain important points. Bland-Sutton says: "The great risk of violent hæmorrhage from the placental site renders operation for tubal pregnancy between the fifth and ninth months of gestation, the fœtus being alive, the most dangerous in the whole range of surgery; hence it cannot be urged with too much force that when it is fairly evident that a woman has a tubal or broad ligament pregnancy *it should be dealt with by operation without delay.*" Kelly's dicta are: "When a diagnosis of an unruptured extra-uterine sac is made the operation should be performed with as little delay as possible." And again: "If the child is viable the operation should be performed without waiting for the pregnancy to complete its term, as false labour may set in at any time and the child be lost." "If the child be dead it is better in such cases to wait several weeks to give the thrombi a chance to

become well organised and the detachment of the placenta will not then be associated with any risk."

The late Professor J. Greig Smith wrote as follows: "Extra-uterine pregnancy may be regarded as among the most deadly of diseases. Nearly three-fourths of all cases die and more than one-half of these deaths is from rupture of the cyst. ..... A dispassionate consideration of the natural terminations of the disease and of the effects of minor modes of treatment, drives one to the conclusion that at all stages and under all circumstances (excluding the exceptional cases where elytrotomy is permissible), cœliotomy is the best treatment." He summarises the indications for operation by abdominal section in extra-uterine fœtation as follows: (1) In all cases before the period of expected tubal rupture (from two and three-quarter to three and three-quarter months), in fact, as soon as the condition has been discovered, should electricity fail to kill the ovum. 2. In all cases of tubal rupture as soon as possible after the condition has been diagnosed. 3. In all cases up to the fourth month in which the fœtus continues to live. Between the fourth month and the period of false labour operation is not advisable. 4. In all cases after false labour, when the child is dead and the amnion is absorbed. If suppuration takes place, operation is imperative; if the fœtus is quiescent, operation, though advisable in the view of preventing further trouble, is not urgent. Absorption of amnion is waited for because this indicates cessation of circulation in the placenta. 5. In all cases where the condition endangers the life of the mother. He says also: "The wise practice is that the less important life shall give way to the more important; that where sacrifice is called for the child must give way to the mother."

Henrotin's opinion may also be quoted: "When a woman is so reduced by repeated attacks of circumscribed peritonitis, recurrent moderate hæmorrhages, and excessive pain that she can neither endure operation nor continue in her present condition, the proper treatment is to insert a hypodermic needle deeply into some prominent fœtal part under aseptic precautions and inject half a grain of morphine. This will kill the child but will not harm the mother. When the child dies the placental souffle will disappear, pain will subside, part of the liquor amnii will be absorbed, dyspnœa will lessen, hæmorrhage will not recur, and after three or four weeks an operation can be safely performed. When a woman of strength and in good health has an extra-uterine gestation with the child presenting favourably and a placenta that can apparently be easily avoided an endeavour to save the child should be made."

Herman, whose opinion must carry great weight, differs in some essential points from the others. He contends that it is very rare to find any thing untoward in the second half of an ectopic pregnancy. He says "that after spurious labour the child dies and that after a time, usually about six months, suppuration begins. It may begin sooner—within six weeks—or it may be postponed for a year or two years or it may never happen and the patient may live to old age with no other trouble than a lump of some size in her abdomen but this is unusual and suppuration is the rule." The point on which he lays stress is that from the end of the first half of ectopic pregnancy to the beginning of suppuration the patient is practically in no danger and he argues: "Fatal events during this period are excessively rare. There is therefore no urgent necessity for operation." He continues: "The only reason that I can discover for urging immediate operation at this stage of the case is that ectopic pregnancy is an illness and the earlier operation is done the shorter the illness. We ought to think of the mother's life; let spurious labour come on and the child die."

In the three unruptured cases which I have to record (one at three months and the other two at five months) perfect recoveries were made and I should be inclined to operate in the same way in similar cases. If one had a case at the eighth month one would have to decide between immediate operation with a chance of saving both mother and child or waiting for spurious labour. The decision must rest on the special circumstances of the case and it would be well to let the mother choose after an explanation of the *pros* and *cons*. It is rightly held that the life of the child should be subordinate to that of the mother, and it would be wise, therefore, if we can accept Herman's dictum that "delays are *not* dangerous," and if there are no special reasons otherwise, to use expectant treatment and to wait for the death of the child.

CASE 5. *Ruptured tubal gestation; operation; death on fourth day from hæmorrhage or embolism.*—The patient, married, aged 35 years, was seen with Dr. Alexander Ogston, jun., early one morning some years ago. She had a typical history of a tubal pregnancy of six weeks which had ruptured during exertion some hours before. Her condition was very serious as the intra-abdominal hæmorrhage had been very severe. She was admitted to the infirmary and after restorative treatment the abdomen was opened and a large amount of blood was removed. The ovum was found in a blood clot. The patient seemed to be going to make a good recovery but suddenly collapsed on the fourth day.

CASE 6. *Right intra-ligamentary pregnancy of five months; operation; recovery.*—The patient, married, aged 29 years, was sent to me in May, 1901, by Dr. Middleton Connon of Montrose. She had been married ten years and had four children, the youngest being three years old. She had had a bad recovery from her last confinement but since then had been quite well until towards the end of January, 1901, when she was seized with sharp shooting pain "like a knife" in the lower part of the abdomen and groins of both sides. This was accompanied by sickness and vomiting. Poulticing and rest eased her but she had a sharp recurrence four or five days later again with sickness and vomiting. She had not menstruated since the last week of December. About the beginning of March (the third month of pregnancy) she noticed a small round lump on the right side of the abdomen and this had gradually increased in size till it was now as high as the umbilicus. The lump had been painful recently. On examination prominent veins were seen on the chest and over the sternum. There were areolæ round the nipples. In the abdomen inclining to the right a tumour could be felt as high up as the umbilicus, while a smaller one, which apparently contracted on palpation, could be made out to the left of the large swelling; the latter was evidently the uterus enlarged to the size of a two months pregnancy. The patient thought that she was five months pregnant. There had been no menstrual discharge or decidual membrane thrown off. No fœtal heart sounds could be made out in the large tumour and ballottement was absent. Diagnosis lay between a right intra-ligamentary ovarian cyst with a two months pregnancy or extra-uterine fœtation on the right side with the uterus enlarged to the size of a two months pregnancy. The latter seemed the more likely.

The patient was operated on on May 24th, 1901. On opening the abdomen the uterus was found to be of the size and in the position described above. The right and larger tumour was then aspirated at a soft and fluctuating part but blood clot blocked the cannula. The sac was then opened and blood and liquor amnii escaped. Omental adhesions had to be separated and there was free bleeding. A fœtus of about five months size was seized by the legs and removed and the cord cut short. The sac was sutured to the lower edges of the abdominal wound and packed with gauze. The patient was dismissed on the fifty-sixth day after operation, there being still a small sinus. Though there was occasional slight bleeding from the cavity during the gradual separation of the placenta it was controlled by packing and the case ran an aseptic course.

CASE 7. *Left pseudo-intra-ligamentary pregnancy of five months; operation by abdomen; severe hæmorrhage; operation per vaginam; recovery.*—The patient, aged 33 years, was sent in January, 1903, to the Royal Infirmary by Dr. McKerron. She had been married 12 years and had had a child 11 years ago. Menstruation had been regular till October last. The pain in the abdomen started in September and at the same time a tumour began to appear which grew gradually till admission. On examination a rounded tumour of about the size of an adult head was found in the lower part of the abdomen. Palpation revealed the presence of two distinct tumours, the uterus considerably enlarged and pushed to the right side, and a much larger cystic swelling on the left. On vaginal examination the cervix was found to be drawn up above the pubes and in front of it a distended bladder was felt. Douglas's pouch was filled by a large soft fluctuating cyst and ballottement could be made out with a little difficulty. The diagnosis was clear. On Jan. 26th an incision was made over the most prominent part of the tumour. On cutting into it the hæmorrhage was so profuse that tight gauze plugging had to be inserted at once; the edges of the

sac were stitched to the abdominal wall and the operation was abandoned for the time. On Feb. 6th she was again anæsthetised but on attempting to remove the plugging hæmorrhage was so great that it had to be replaced at once. Nothing further was done for a fortnight, during which time the plugs kept sweet and the temperature normal. On Feb. 17th (three weeks after the first incision and insertion of gauze packing) an opening was made horizontally in Douglas's pouch and a five months fœtus was delivered. The cord was tied and the placenta was left *in situ*. The after-course was perfectly normal and the temperature was satisfactory. The discharge from the sac was fœtid till March 10th (21 days after delivery) when the placenta came away. The cavity then healed up very quickly. The hæmorrhage at the first operation was due to the incision being in or near the placental site. Had immediate plugging not been resorted to the patient would have died on the table. As it was her condition was for a time serious though she improved rapidly under saline infusions. This patient was again admitted to my wards a fortnight ago with a distinct history and symptoms of extra-uterine fœtation of two months' duration. She is there at present under observation.

CASE 8. *Left intra-ligamentary pregnancy of three months; operation; recovery.*—The patient, aged 35 years, was seen with Dr. J. Brander. She had been married 12 years and had a child a year later but since then she had not been pregnant. She was examined in December, 1904, for severe pain and abdominal swelling. She had not menstruated for three months. Bimanual examination revealed a swelling on the left side of a slightly enlarged uterus. A diagnosis of extra-uterine pregnancy was made and operation was advised. She was operated on on Dec. 12th and a left intra-ligamentary pregnancy was found. The sac was opened, the fœtus was removed, and the edges of the opened broad ligament were stitched to the lower part of the abdominal wound. The cavity was packed with aseptic gauze with a reinforcing vaginal pad. There were moderate bleeding at the operation and once or twice oozing from the cavity during the separation of the placenta but the case ran an aseptic and uneventful course.

The other two cases were private ones but I think they present some features of interest.

CASE 9. *Chondroma of pelvis narrowing outlet; Cæsarean section; recovery.*—(Dr. McKerron has kindly furnished the early notes of this case.) The patient, a primipara, aged 33 years, was in good health throughout pregnancy. In the beginning of the eighth month fœtal movements began to be less active and by the middle of the month entirely ceased. Examined towards the end of the eighth month the abdomen was small for the period of pregnancy and no fœtal heart sounds could be heard. At term, as there were no signs of commencing labour, a vaginal examination was made which disclosed a tumour projecting from the left side of the sacrum. The tumour, which was of cartilaginous consistence, was of about the size of a Tangerine orange and so narrowed the outlet of the pelvis, which was of the generally contracted type, that the distance from the symphysis to the nearest part of the tumour was only one and a half inches. The tumour was extremely tender, pressure on it causing severe cramp-like pains down the left leg. Labour was artificially induced. The breech presented and extraction was easily effected, the child being small and soft but not macerated. At the end of June, 1904, I saw her with a view to Cæsarean section which had been determined on by Dr. McKerron and Professor Stephenson as the proper treatment, her second pregnancy being then near term. Sänger-Cæsarean section was performed on July 5th in the Richmond-hill Nursing Home. The child was a healthy female of average size. Both mother and child did well and left the home about a month later.

CASE 10. *Celiotomy for painful adhesions during pregnancy; recovery.*—The patient, a multipara, aged 35 years, was seen with Dr. J. J. Y. Dalgarno. She was four months pregnant and had considerable pain over the lower left side of the abdomen, in which a painful thickening close to the fundus of the uterus could be felt. Operation was advised and she went to a nursing home for that purpose. The cause of the pain and thickening was found to be adhesions of the omentum. These were easily separated. The pain entirely disappeared after operation and the pregnancy went to full term.

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BLOOD CHANGES IN MENINGITIS IN CHILDREN.[1]

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OUR knowledge of the changes occurring in the blood in diseases other than those of the blood itself has until quite recently been in a more or less undeveloped state; latterly, however, thanks to the labours of workers in this special branch of pathology, we have come to recognise that in some diseases of a general or constitutional nature the blood, as well as other tissues, frequently exhibits changes which are almost characteristic of the disease in question. This advance in our knowledge of the pathology of the blood has been assisted by the increased simplicity of technique in blood examination and by the fact that nowadays the blood of patients is investigated as a matter of routine and almost irrespective of the disease from which they may be suffering. From the vast amount of literature on the subject, which has already accumulated, and from inferences drawn from such, special blood changes are now known to occur in many diseases; an additional means of physical examination has thus come into prominence and the assistance given to the diagnosis and consequently to the treatment of disease has been very great. Further, the presence of many complications occurring during the course of a disease may frequently be either confirmed or refuted by a careful blood examination and a logical interpretation of the results; in illustration of this latter statement, one may quote the case of a patient suffering from an attack of typhoid fever; in this disease there is usually a diminution in the number of leucocytes in the circulating blood; towards the end of the second week or the beginning of the third the patient exhibits a sudden change, as indicated by severe abdominal pain, rapid pulse, and a rapid fall in the body temperature; one naturally discusses the possibility of the occurrence of a perforation of the intestine but owing to the dulling of the patient's sensibility by the continued fever and the toxæmia, the symptoms and physical signs are too indefinite to allow of a diagnosis being made with any degree of certainty. A leucocyte count may here be of the greatest value, for should the white cells show a definite increase above the normal number it is extremely probable that perforation has occurred, radical measures of treatment can then be carried out with the least delay and the life of the patient possibly saved, whereas, if the case be treated in a palliative manner till definite signs of peritonitis have appeared the patient will almost certainly die, whatever the treatment. Further, the presence of pus in any part of the body can often be confirmed by a leucocyte count and it is now quite common for a count of the white cells to be made in cases of appendicitis with a view of determining whether the attack be merely catarrhal or suppurative in nature, the presence of a marked, and especially an increasing, leucocytosis greatly favouring the diagnosis of suppuration.

From these few remarks it is evident that a knowledge of the changes which the blood undergoes in various diseased states is of the greatest value, since it may insure the rational treatment of disease which, after all, is the main aim of medicine. In order to interpret correctly any pathological changes found in the blood an intimate knowledge of its chief characters in health is essential; I shall therefore briefly describe the blood of a healthy adult, and since my paper deals with children I shall indicate the chief points of difference between the adult's blood and that of the child.

SECTION A.

The blood consists essentially of the red and white corpuscles floating in a clear fluid, the liquor sanguinis. The red corpuscles are small bi-concave discs, from 7 to 8 μ in diameter and mostly rounded in form; they are thicker at the rim than in the centre and are composed of a fine network of protoplasm,[2] containing within the meshes a colouring matter, the hæmoglobin. In the male they number 5,000,000 to the cubic millimetre of blood and in the female somewhat less, about 4,500,000. The white corpuscles,

[1] Thesis for degree of M.D. Cambridge.

[2] Bruecke and Rollett: Quain's Anatomy, vol. i., part 2, p. 210.

of which there are 7500 to the cubic millimetre, consist of the following varieties: 1. Polynuclear cells. These are large cells, from 9 to 10 μ in diameter, the protoplasm of which contains fine granules, which stain faintly with both acid and basic dyes. The nucleus of the cell is very inconstant in shape, sometimes appearing in the form of a horseshoe, at other times as if divided into several distinct parts. These cells form from 60 to 70 per cent. of the leucocytes. 2. Small lymphocytes, cells of the size of, or a little larger than, the red corpuscles. Their nuclei are round, indented, or even horseshoe-shaped, stain deeply with basic dyes, and are surrounded by a small amount of clear protoplasm. They form from 20 to 30 per cent. of the leucocytes. 3. Large lymphocytes. These are as large as, or even larger than, the polynuclear cells, the protoplasm is "hyaline," and the nucleus, which is rounded or oval, stains faintly with the basic dyes. 4. Transitional forms. These are similar to the last with the exception that their nuclei are indented or horseshoe-shaped. The large lymphocytes and transitional cells form from 4 to 8 per cent. of the white cells. 5. Eosinophile cells. These are similar to the polynuclear in size and shape but the protoplasmic granules are larger and stain deeply with acid dyes; they form from $\frac{1}{2}$ to 4 per cent. of the leucocytes. 6. Basophile cells. These are rarely seen in normal blood and although similar in form and size to the polynuclear cells their cell granules stain only with basic dyes.

The blood of a child differs from that of an adult in the following particulars: 1. Shortly after birth it contains a greater number of red corpuscles; thus Sorensen[3] states that in male infants from five to eight days old the number is 5,769,500 and in the female child from one to 14 days old 5,560,800 per cubic millimetre of blood. According also to Cabot the number in the newly born is very high. 2. The white corpuscles are very numerous; this excess is most marked immediately after birth and then gradually falls; thus Da Costa says that at birth the count varies between 15,000 and 20,000 or even higher; this decreases after the first 48 hours and at the end of the first week has fallen to 10,000 or 15,000, which number is normal for children under one year of age. From the sixth year and upwards the number of leucocytes is 7500.[4] Of the different varieties of leucocytes in childhood the small lymphocytes are relatively more numerous—from 40 to 60 per cent.—and the polynuclears are less numerous—from 16 to 40 per cent.

In considering the effect which a given disease may have in altering the composition of the blood one ought if possible to eliminate all those factors, which, whilst not forming an integral part of the disease in question, yet may profoundly affect the blood. Of these influences the following are those which most concern us here: 1. Digestion. The effect of digestion on the composition of the blood has been very fully studied by numerous observers, all of whom agree that the number of leucocytes in the circulatory blood increases soon after the taking of food, rises to a maximum four or five hours later, and then gradually subsides; this increase averages 33 per cent. of the whole number of leucocytes.[5] In children this digestion leucocytosis is especially marked and in infants under two years of age it frequently rises to as high a figure as 30,000. What influence digestion has on the differential count is doubtful, some observers having found an increase in the polynuclear cells[6] whilst others have found a lymphocytosis.[7] After a meal, especially when considerable quantities of liquid have been taken, the red cells fall in number owing to a temporary dilution of the blood. 2. Loss of fluids from the tissues of the body, such as occurs in severe vomiting or diarrhœa. The blood being by these means temporarily concentrated, there will be an apparent increase of both red and white corpuscles in number.

With this brief description of the blood in health and its chief physiological variations I shall now pass on to consider in detail the cases of which this thesis is composed.

SECTION B.

In the examination of the blood of my cases I adopted the following methods. The percentage of hæmoglobin was estimated by means of Gowers's hæmoglobinometer and von Fleischl's hæmometer. For the enumeration of the red corpuscles the Thoma-Zeiss apparatus was used, the diluting agent being Toison's fluid. For counting the leucocytes the same pipette as that used for the red cells was made use of and, except where otherwise stated, at least 500 white cells were counted in making the differential count. The stains used for the blood films were Jenner's, Leishman's, and Ehrlich's triacid stains. Of the ten cases of meningitis which I examined eight were tuberculous in nature—namely, Nos. 3, 4, 5, 6, 7, 8, 9, and 10 (*vide* Table). No. 2 was also probably of the same nature, as although an examination of the brain could not be made, yet there was miliary tubercle of the intestines and peritoneum and the symptoms during life were fully in accordance with what one would expect in tuberculous meningitis; I have therefore considered it as belonging to this group. The remaining case, No. 1, was one of serous meningitis or hydrocephalus. Since the hæmoglobin findings exhibit no constant or characteristic features they may be dismissed as being of little value as an aid to diagnosis. The count of red cells was in most of the cases relatively high. Very little has been written on the behaviour of the red cells in cases of tuberculous meningitis and the only statement which I can find is that "the red cells show, as a rule, but slight changes, as is so often found in other forms of tuberculosis."[8] In six of the nine cases of tuberculous meningitis—namely, Nos. 3, 5, 7, 8, 9, and 10—there was no leucocytosis; of the remaining three, in two, Nos. 4 and 6, there was decided leucocytosis—namely, 42,000 and 21,000 respectively—and in No. 2 the count varied, on one occasion being 12,092 and a week later 27,000. From these results it is seen that in over 60 per cent. of cases of tuberculous meningitis there is no increase in the number of white cells. These results differ somewhat from those obtained by other observers; thus Cabot has recorded 27 cases, in 18 of which a leucocytosis was present; his results, however, are indecisive, since apparently the diagnosis was confirmed by necropsy in three only of the cases. In one case reported by Kneas a leucocytosis was present.[9] Rieder[10] has reported two cases, one showing a leucocytosis, the other a normal or subnormal count of white cells. Türck studied three cases, all showing a leucocytosis. Osler[11] says "a leucocytosis is not infrequently present throughout the disease." On the other hand, von Limbeck, in four counts made shortly before death, found no leucocytosis.[12]

As regards the percentages of the different varieties of leucocytes two points are to be especially noted—namely, a diminution of the number of eosinophiles and an increase in the large lymphocytes and transitional cells: thus in eight of the nine cases of tuberculous meningitis, Nos. 3, 4, 5, 6, 7, 8, 9, and 10, the relative proportion of eosinophile cells was below normal, in no case reaching $\frac{1}{2}$ per cent. and in four cases they were entirely absent—namely, Nos. 4, 7, 8, and 10. These results are in marked contrast to the condition found in the case of serous meningitis, in which the eosinophile cells were normal or increased in number. In six of the tuberculous cases the large lymphocytes and transitionals were increased in number—namely, in Nos. 2, 3, 5, 6, 9, and 10, and in one of these they formed 23 per cent. of the total leucocyte count (No. 2). Very few differential leucocyte counts have been reported in tuberculous meningitis, but in those which I have found recorded a diminution or absence of the eosinophile cells was the rule.[13]

Granted, then, that in tuberculous meningitis there is usually no leucocytosis, have we any satisfactory explanation as to why such should be the case? There are, I think, four possible explanations. Firstly, the tubercle bacillus may enter the body and exert its characteristic effects without influencing in any way the number of leucocytes in the circulating blood. We know that the number of leucocytes in the blood is not the same for every individual but varies according to the robustness or delicacy of the person's constitution; thus in the robust it is relatively high, whilst in the feeble it is low, sometimes reaching as low a number as 3000 per cubic millimetre.[14] Other things being equal, one may therefore assume that persons with a low leucocyte count are more

[3] Cited by von Limbeck: Gründriss einer klinischen Pathologie des Blutes, Jena, 1892.
[4] Da Costa: Clinical Hæmatology.
[5] Cabot: Clinical Examination of the Blood.
[6] Burian and Schür: Wiener Klinische Wochenschrift, February, 1897.
[7] Cabot: Loc. cit.
[8] Ibid., pp. 283–84.
[9] Journal of Nervous and Mental Diseases, New York, 1903, vol. xxx., p. 431.
[10] Quoted by Cabot.
[11] The Principles and Practice of Medicine, fourth edition, p. 279.
[12] Quoted by Cabot.
[13] Türck: Quoted by Cabot.
[14] Cabot: Clinical Examination of the Blood, pp. 105 and 95.

APPENDIX OF CASES.*

No.	Age.	Temperature.	Percentage of hæmoglobin.	Number of red cells per cubic millimetre.	Number of white cells per cubic millimetre.	Polynuclear cells (per cent.).	Small lymphocytes (per cent.).	Large lymphocytes and transitional forms (per cent.).	Eosinophile cells (per cent.).	Remarks.
1	One year and three months.	98·0° F. 98·0° F.	92 100 (?)	5,066,660 4,552,000	18,430 12,684	43·8 47·2	39·4 42·3	11·7 5·6	4·4 4·1	Necropsy. Serous meningitis with hydrocephalus. A week elapsed between the two blood examinations.
2	Seven months.	98·2° F. 100° F.	55 60	5,200,000 5,096,000	12,092 27,390	36·1 44·18	39·2 42·9	23·42 12·5	1·1 0·36	Necropsy. The brain could not be examined but there was miliary tubercle of the intestines and peritoneum and during life symptoms of meningitis. A week elapsed between the two blood examinations.
3	One year.	98° F.	64	4,962,000	11,455	78·9	11·0	9·5	0·47	Necropsy. General tuberculosis with tuberculous meningitis. Only 200 white cells were counted in the differential count.
4	11 months.	99·8°F.	82	5,480,000	42,984	83·3	11·5	5·1	—	Necropsy. General tuberculosis, excess of subarachnoid fluid, but no definite tubercles were seen.
5	Two years and eight months.	101·4°F.	94	4,760,000	10,476	65·7	24·5	9·5	0·18	Necropsy. Tuberculous meningitis.
6	Three years.	100·2° F.	74	4,704,000	21,410	70·6	20·07	9·5	0·19	Necropsy. Miliary tuberculosis with tuberculous meningitis.
7	One year and one month.	98·0° F.	55	5,904,000	9,461	73·0	20 7	5·8	—	Necropsy. General tuberculosis with tuberculous meningitis. Only 275 white cells were counted in the differential count.
8	Four years and five months.	99·0° F.	70	6,720,000	5,343	88·8	6·7	5·0	—	Necropsy. General tuberculosis with tuberculous meningitis. Only 280 white cells were counted in the differential count.
9	Seven months.	101·8° F. 97·0° F.	70	5,352,000	15,826 12,632	64·5 69·3	24·8 21·4	10·4 9 1	0·16 0·14	Necropsy. General tuberculosis with tuberculous meningitis. A week elapsed between the two blood counts.
10	Five years.	100·6° F. 100·4° F.	77	6,614,400	12,631 12,317	81 4 83 0	7·8 7·1	10·5 9·8	— —	No necropsy. Symptoms of meningitis during life. Three days elapsed between the two blood examinations.

* In the above list of cases the blood was taken from the patients shortly before or after a meal, so as to reduce to a minimum errors due to the effect of digestion on the composition of the blood. In no case was there any excessive drain on the blood, such as severe vomiting or diarrhœa.

liable to infectious diseases of all kinds than their more robust companions. On this supposition there is no direct connexion between the occurence of tuberculous disease and the leucocyte count, both being the result of a common cause—namely, depressed vitality. Secondly, there may be no leucocytosis because the irritation of the tissues by the tubercle bacillus and its toxins is either too mild in nature or too severe. In support of this we have experimental evidence; thus, if in an animal a dose of bacterial products of sufficient strength or large enough in quantity to cause death be injected, no leucocytosis occurs; to obtain a leucocytosis the dose must be of moderate size or strength and the resistance of the animal good. Now, there is no evidence that the toxic products of the tubercle bacillus are of a very mild nature; on the contrary, the exact opposite is the case, as evidenced by the effects produced by injection of tuberculin. For reasons, however, which will be discussed later, there is evidence to show that the most active constituent of the tubercle toxin can be taken up by the body tissues in very small quantities only and, such being the case, the irritation is insufficient to cause a leucocytosis (one of the signs of reaction of the body to an irritant). Thirdly, the tissues being constantly exposed to the toxins of the tubercle bacillus may in time come to be endowed with a relative immunity to them and therefore will no longer exhibit any reaction on further exposure to the irritant. Since every case of tuberculous meningitis is secondary to a deposit of tubercle in some other part of the body one may justly assume that during the time that elapses between the dates of primary infection and the onset of secondary disease in the cerebral meninges a continual absorption of tubercle toxin has been going on and although at the time of primary infection the irritant effect of the toxin may manifest itself in the usual manner, yet by a constant exposure to the poisons the body has so accommodated itself that a reaction in the form of a leucocytosis now no longer occurs, even when a general dissemination of tubercle takes place. Fourthly, the most active and powerful toxin produced by the tubercle bacillus may arise in the body of the bacillus itself but owing to the nature of the bacterial cell is unable to escape in sufficient quantities to exert its irritant action on the body tissues. All pathogenic organisms produce as a result of their growth extracellular toxins; some, however, such as the diphtheria, tetanus, and tubercle bacilli, also form intracellular toxins. Now the composition of the cell bodies of the diphtheria and tetanus bacilli is such that no great opposition is offered to the escape of any intracellular toxin which may be formed; this on being absorbed gives rise to a leucocytosis, the usual condition found in cases of diphtheria and tetanus. On the other hand, the tubercle bacillus being composed of various insoluble fatty acids

any intracellular toxin formed can either not escape at all or can escape in very small quantities only unless the bacilli die in large numbers, when the intracellular toxins are diffused into the surrounding tissues and can then be readily absorbed. If tubercle cultures be filtered germ free and the filtrate be injected into an animal a less marked reaction occurs than if the bacilli as well as the filtrate be injected (some say this is due to the filtrate containing a toxalbumin having a temperature-lowering effect); this seems to favour the view that the intracellular toxins of the bacillus are more active than the extracellular. A patient, then, having become infected with the tubercle bacillus, there are produced at the seat of invasion extracellular toxin which has very little irritant effect on the tissues and intracellular toxin; the latter, however, is taken up by the body in such small quantities that the irritation produced is negligible and a reaction in the form of a leucocytosis does not appear.

Regarding the second finding in my cases—namely, a diminution in the number of eosinophile cells—we have no adequate explanation, the function of these cells being at present but imperfectly understood. Some observers consider that they are concerned with the defence of the body against invading micro-organisms, the granules of the protoplasm being secreted by the cells themselves and consisting of a substance which is injurious to bacteria. This view is supported by the fact that either finely granular oxyphil cells or coarsely granular (eosinophiles) are generally the first to arrive at the seat of invasion by a micro-organism.[15] Kanthack and Hardy,[16] however, state that in the case of the rat, the frog, or the guinea-pig, the coarsely granular oxyphil cells are never phagocytic. From these conflicting statements it is therefore evident that we are still far from knowing what the function of these cells is and any attempt to explain an increase or a diminution of them would be unwarrantable. The large lymphocytes and transitional forms being, as is well known, intensely phagocytic in nature their increase is most probably due to an attempt on the part of the body to rid itself of the offending agent—namely, the tubercle bacillus.

The conclusions to be drawn from the results of my investigations are that in tuberculous meningitis in children, (1) the red corpuscles are usually present in normal or increased numbers; (2) the majority of cases show no leucocytosis; (3) the eosinophile cells are reduced in number; and (4) the large lymphocytes and transitional cells are generally present in increased proportions.

For permission to make use of the cases in the wards of the North-Eastern Children's Hospital I am indebted to Dr. W. A. Wills, Dr. J. Taylor, Dr. J. Porter Parkinson, and Dr. G. Carpenter, and for access to the clinical notes of the cases my thanks are due to the house physicians, Mr. S. L. Harke, Mr. R. M. Im Thurn, and Dr. R. G. Nothwanger.

Colchester.

TWO CASES OF TRICHROMIC VISION.[1]

BY F. W. EDRIDGE-GREEN, M.D. DURH., F.R.C.S. ENG.

CASE 1.—One case (Professor J. J. Thomson) sees only three colours in the bright spectrum—red, green, and violet. He can distinguish nothing of the nature of pure yellow, like the sensation given him by the sodium flame in the spectrum. There is no definite colour to him at the portion of the spectrum where the normal sighted see pure blue. Reddish-green would describe the orange and yellow regions and greenish-violet the blue. λ 5950 (orange-yellow) is the point which differs most from red and green. There was no shortening of either end of the spectrum. The point of junction of the red and green differed somewhat in repeating the observations because of his great sensitiveness to simultaneous contrast. It was, however, always in the orange or orange-yellow, never in the yellow of the normal sighted.

Difference of hue perception.—I then tested him with my apparatus for ascertaining the size of different parts of the spectrum which appear monochromatic and found that he was defective in distinguishing differences of hue. A portion of the spectrum corresponding to the D lines and isolated by two shutters in the eye-piece of the spectroscope was first shown. The shutter on the red side was gradually opened until a difference of hue was seen. The monochromatic patch extended from λ 5889 to λ 6052, being exactly half as large again as that of the normal sighted, which occupies the space from λ 5889 to λ 5998. The monochromatic patch he called greenish-yellow. His monochromatic patch in the centre of the green bore exactly the same proportion to mine as in the case of the orange-yellow, being just half as large again.

Colour mixtures.—He was then tested with Rayleigh's apparatus for matching spectral yellow by a mixture of red and green. 0 of the scale corresponded to pure red, and 25 or 90° to pure green. He made the following 10 matches:—

Match.	Difference.	Match.	Difference.
†1. 13·40	+ 0·67	* 6. 11·75	− 0·98
*2. 12·0	− 0·73	* 7. 11·75	− 0·98
†3. 12·75	+ 0·02	† 8. 13·50	+ 0·77
*4. 12·0	− 0·73	† 9. 12·90	+ 0·17
†5. 13·50	+ 0·77	*10. 13·75	+ 1·02
Average, 12·73.		Average difference, 0·684.	

I find that my colour vision agrees with that of the large majority of persons and may therefore be regarded as normal. I made the following ten observations for comparison with those given above:—

Match.	Difference.	Match.	Difference.
*1. 11·0	+0·629	* 6. 10·0	−0·371
†2. 10·25	−0·121	† 7. 10·50	+0·129
*3. 9·80	−0·571	* 8. 10·50	+0·129
†4. 10·33	−0·041	† 9. 10·60	+0·229
†5. 10·33	−0·041	*10. 10·40	+0·029
Average, 10·371.		Average difference, 0·229.	

* Red shown first in the mixed colour. † Green shown first.

My match appeared to him bright-red and bright-green, the yellow appearing as green. The match appeared more correct through a pin-hole. The mixed colour of his match always appeared green to me. It will be noticed that his average difference is very nearly three times the amount of mine. On comparing the differences, according to the colour which was shown first, it will be found that these were all positive when the green was shown first and four out of the five were negative when he commenced with the red.

Green first	Red first
+ 0·67	− 0·73
+ 0·02	− 0·73
+ 0·77	− 0·98
+ 0·77	− 0·98
+ 0·17	+ 1·02
Average, 0·48	Average, 0·888

Below I give my differences for comparison.

Green first	Red first
− 0·121	+ 0·629
− 0·041	− 0·571
− 0·041	− 0·371
+ 0·129	+ 0·129
+ 0·229	+ 0·029
Average, 0·1122	Average, 0·3458

He seemed to get very easily fatigued with colours.

Classification test.—Called 1 (orange) "reddish-orange" and matched it with orange and dark yellows. Described 2 (violet) as mauve and put with it violets and purples. Named 3 (red) correctly and picked out various reds to go with it. Called 4 (blue-green) "green" and matched it with some greens. Only a few colours were selected in each case. On being asked to pick out all the yellows he chose those with orange in them. He regarded orange-yellow as his yellow and rejected pure yellows because he said that they had green in them. He had considerable difficulty in matching the colours. In common with the cases I have previously observed the effects of simultaneous contrast were much more marked than in the normal sighted. Two wools changed colour to him on being contrasted when no change was evident to me. This was particularly noticeable when one of the contrasted colours was red, green, or violet, and the other, one of the intermediate and adjacent colours.

Lantern test.—He correctly named the red, green, and violet with and without the neutral glasses and saw them at the normal distance. He had difficulty with yellow and blue. He called pure yellow "greenish yellow." It will be noticed that the examination with the spectrum gives a key to the mistakes made.

[15] Lazarus-Barlow: Manual of Pathology, pp. 406 and 282.
[16] Kanthack and Hardy: Ibid.

[1] A paper read before the Royal Society. The research was made with the aid of an instrument purchased with a grant from the Government Grant fund.

CASE 2.—The other case is that of Mr. P. S. Barlow, B.Sc., a research student in the Cavendish Laboratory. He sees three colours in the spectrum—red, green, and violet. The red gradually passes into the green and red-green would describe this region and green-violet that of the blue. He sees no yellow or blue in the spectrum. When I put the pointer in the yellow he said it was in the green. He gave λ 5892 three times out of four as the junction of the red and green, the fourth time λ 5950. Both are in the orange-yellow. He selected λ 4800 (blue) as the point of union of the green and violet. He was very sensitive to simultaneous contrast. When shown the violet first he put the junction of the green and violet at λ 4861; when shown the green first at λ 4740. There was no shortening of either end of the spectrum.

Difference of hue perception.—He was tested in the same way as Professor Thomson. He also called the orange-yellow patch "yellow-green," and I had to increase the size of the patch until it was half as large again (λ 5889 to λ 6052) as that of the normal sighted before a difference was seen. I examined him in the same way with the other colours of the spectrum and found that in every part he marked out a much larger monochromatic patch than the normal sighted.

Colour mixtures.—He was then tested with Rayleigh's apparatus. On being shown my match he said that the yellow was green and the mixed colour salmon pink. He said that the yellow of my match was too dark, and in order to make a match, as far as luminosity was concerned, he had to increase the brightness of the yellow. No match was then possible to me. He made the following 10 matches:—

Match.	Difference.	Difference, red first.	Difference, green first.
* 1. 15·66...	−0·815	—	—
* 2. 17·0 ...	+0·525	—	—
† 3. 16·90...	+0·425	—	—
* 4. 16·33...	−0·145	—	—
† 5. 17·40...	+0·925	—	—
† 6. 17·0 ...	+0·525	−0·815	+0·425
* 7. 16·0 ...	−0·475	+0·525	+0·925
† 8. 15·33...	−1·145	−0·145	+0·525
* 9. 15·80...	−0·675	−0·475	−1·145
†10. 17·33...	+0·855	−0·675	+0·855
Average, 16·475	Average, 0·651	Average, 0·527	Average, 0·775

* Red first. † Green first.

Lantern test.—He called pure yellow "yellow-green" and pure blue "blue green." Dark blue he called purple. The other colours he named correctly.

Classification test.—1 he designated "golden yellow" and matched it with orange. 2 he called "purple" and put with it violets and purples. 3 he said was "crimson" and sorted out a few reds to go with it. 4 he named "blue" and matched with greens and blues. Many colours were omitted. He called yellow "yellow-green." He chose orange-yellow for yellow. He found great difficulty with blue and green. Ladies have several times told him of mistakes in this respect. On being shown 4 (blue-green) a second time he said that it was "pure green without a trace of blue." Simultaneous contrast was very strongly marked.

I use the term *trichromic* as a statement of the fact that persons having this vision see only three colours in the bright spectrum, whilst the normal sighted see six and may, therefore, be designated *hexachromic*. It is probable that the appearance of the bright spectrum to the trichromic is very similar to that of a spectrum of feeble luminosity to the normal sighted in which only three colours—red, green, and violet—are seen. The defective difference perception which is found in these cases accounts for most of the facts. Both these cases are bordering on the tetrachromic, as the sodium flame appears to give rise to a distinct sensation.

Cambridge.

OBSERVATIONS UPON THE BLOOD.[1]

BY C. WILLETT CUNNINGTON, M.B., B.C. CANTAB.

MUCH attention is rightly paid nowadays to the condition of the blood for purposes of diagnosis and prognosis. Although a vast mass of information has already been recorded by many observers, yet much work remains to be done. In this paper chief attention will be paid to points hitherto neglected. The question of the granularity of the eosinophile cell has not been touched upon so far as I am aware, yet it is of considerable importance and it would be interesting if others directed their attention to this with a view to confirming or correcting my results. Further work requires to be done on the blood in those obscure conditions of "abdominal pain associated with pyrexia" where the diagnosis is uncertain. Some other conditions of the blood will be briefly referred to.

The granularity of the eosinophile cell.—In order to count the number of granules in these cells it is necessary to use a high degree of magnification. A Zeiss $\frac{1}{12}$ objective, oc. 5, tube length 180 millimetres, was employed. Even with this magnification (nearly 1200 diameters) the smallness of the granules entailed considerable eye strain. Furthermore, the granules in many of the cells are uncountable as they are so crowded together. Suitable cells must be carefully sought for, "crowded" ones being rejected. An average of the counts obtained in each specimen may be considered as a fairly accurate estimation of the granularity of the cell for that particular specimen of blood. The first question that arises is whether the number of granules is at all constant in the blood of health, and next whether the granularity is constant or varies with different people. This was the first point to be settled. Briefly, it was found that the granularity of the eosinophile was almost the same for all healthy adults; each cell contains from 210 to 220 granules; during health the limits of variation are narrow. This being settled the blood in various diseases was examined. In most acute diseases it is well known that the (coarsely granular) eosinophile cell is diminished and may entirely disappear. On its reappearance marked changes in the granularity are seen. The cell is no longer uniform; it reappears in two forms; the commoner form is smaller than normal and has a considerably diminished granularity. Thus, from 100 to 120 granules per cell is the common figure.

The second variety of cell is larger, the nucleus perhaps more spherical, and the number of granules greatly increased. These "megaleosins," as they may conveniently be termed, generally have from 250 to 350 granules per cell. The granules themselves are larger, I think, than those in the "micreosins," but it is difficult to assert this definitely. If during recovery from almost any acute illness the blood be examined from time to time it will be seen that the small-celled variety (which may be called "micreosins") increases gradually in granularity, while the "megaleosins" disappear, until ultimately the normal conditions are resumed.

Reference to some cases may be made in proof of these statements. A case of syphilitic psoriasis where eosinophilia was present (11·6 per cent.) showed a diminished granularity (120 granules per cell). In typhoid fever, where the eosinophile cell is generally late in returning to the peripheral blood, the granularity is at first from 140 to 150. Slowly this increases during recovery; in one case the normal figure was only reached three weeks after the temperature became normal. In lobar pneumonia, where the cell returns rapidly after the crisis, the granularity at first is below this figure—namely, from 120 to 130. Indeed, most of the lowest figures were obtained in cases of pneumonia about the time of crisis. In some cases where a disease is acute and terminates rapidly—e.g., a slight attack of appendicitis lasting a couple of days—the granularity of the eosinophile increases during convalescence until it exceeds the normal. After a few days the figures diminish again to normal in a manner resembling a temperature chart where the line falls below the normal for a few days after an acute fever.

Much more work has to be done upon the granularity of the eosinophile cell before definite conclusions can be safely made. At present, however, I cannot help connecting the suggestions afforded by these notes with the hypothesis of the function of this cell—namely, that the granules are antitoxic or bactericidal in nature, that they are discharged into the blood at the onset of an infection, and that after the toxins have been neutralised the blood becomes richer in antibodies. The manner in which the granules steadily increase in number during convalescence certainly suggests that of a gland cell and its method of secretion.

Cases of "abdominal pain and pyrexia."—These include not only such well-recognised conditions as appendicitis, pyosalpinx, &c., but also less definite diseases, often diagnosed as "abdominal influenza," "appendicular colic," "constipation," often not diagnosed at all. Supposing a patient is

[1] An abstract from the thesis for the degree of M.B. Cantab.

seen with pain over the abdominal area (not localised) associated with two or three degrees of fever, if it is a hospital case, it is easy to anticipate the diagnosis that will be made. The physician murmurs "enteritis," the gynæcologist talks of "salpingitis," while the surgeon whips out the appendix. Will a blood examination help these seekers after truth? The more experience one has on blood counts in these obscure cases the more one realises that the answer is in the negative.

A surgeon has been heard to state that a leucocytosis of over 20,000 "means pus." A glance at any collection of statistics shows the inaccuracy of such a remark. Three or four days' constipation may send the white count up to the "pus level." Woe betide your appendix if you enter an up-to-date surgical ward with a loaded cæcum! Of course, great value is rightly attached to a *series* of blood counts upon any one patient. This point is so well recognised now that it is unnecessary to discuss it further. I would suggest, however, that consideration of the percentage of the coarsely granular eosinophile cell in these cases is often helpful.

To summarise my results, it may be briefly stated that when this cell is present to the extent of 1 per cent. or more it is almost certain that there is no active suppuration taking place. This cell may be quite absent although there is no abscess. In some cases of abscess there is no leucocytosis but in these cases the eosinophile cell is always greatly diminished in percentage and is generally absent. Cases of chronic pyosalpinx frequently show no leucocytosis, yet the eosinophile percentage is very small, thus differing from cases of ovarian tumours. It is often asked, Why do some cases of suppuration give a leucocytosis and others not? Briefly the answer is that when toxins are being absorbed under pressure there is a high leucocytosis; when the fibrous wall of the abscess is so dense that very little absorption of toxins is taking place there is little or no leucocytosis; when pus is draining freely away the same absence of leucocytosis is found. But in both of these two conditions (conditions of suppuration without leucocytosis) the eosinophile cell is greatly diminished or absent. Hence the importance of paying attention to the *differential* as well as the *simple* blood count.

Secondary pernicious anæmia.—A man, aged 48 years, was seen in August, 1903, suffering from a moderate attack of purpura hæmorrhagica. The blood count showed 4,216,000 red cells and 1500 white cells per cubic millimetre. A differential count showed: finely granular eosinophiles, 50·5 per cent.; coarsely granular eosinophiles, 1·5 per cent.; lymphocytes, 47 per cent.; and hyalines, 1 per cent. There were no abnormal white cells or red cells. Eight months later, after one or two slight attacks of purpura, his blood count was as follows: red cells, 1,900,000 and white cells 3500 per cubic millimetre; hæmoglobin, 45 per cent. A differential count showed: finely granular eosinophiles, 41·4 per cent.; coarsely granular eosinophiles, 0·0 per cent.; lymphocytes, 52·4 per cent.; hyalines, 6·1 per cent.; myelocytes, 0·2 per cent.; and nucleated red cells, 770 per cubic millimetre (chiefly normoblasts, a few megaloblasts). The colour index was 1·1. There was marked poikilocytosis. In other words, the blood was typical of pernicious anæmia. At the necropsy the usual changes of pernicious anæmia were found.

The point of interest in this case is this. Was the intense anæmia secondary to the repeated hæmorrhages or was it true pernicious anæmia in which the hæmorrhages began before the characteristic blood changes? This case suggests that anæmia gravis is not always a primary disease. One wonders, indeed, is it ever? It is generally stated that the cardinal blood changes in pernicious anæmia are low red count, high colour index, poikilocytosis, presence of nucleated red cells, and generally myelocytes. Now if a number of cases of chronic anæmia, secondary to hæmorrhages or malignant disease, phthisis, &c., rickets, scurvy rickets, or dyspepsia, are examined, one loses much faith in "cardinal signs." One finds an anæmic patients with red cells under 3,000,000 per cubic millimetre, poikilocytosis, nucleated red cells, and *low* colour index, and this persists for months and months. Or a patient may have all the changes mentioned except the presence of nucleated red cells and one watches and waits until the complete set of signs appear. Are these "pernicious anæmias"? Are they on the border-line? Later, when all the signs are found, have they passed the line? The more one sees of such puzzling cases the more one hesitates to employ the term "primary pernicious anæmia."

Highbury-hill, N.

TETANUS AND CHLORAL HYDRATE.

BY JOHN MABERLY, M.R.C.S. ENG., L.R.C.P. LOND.

IN reading the reports of cases of tetanus we are usually struck with the number of drugs (including antitetanic serum) which have been administered and consequently it is quite impossible to decide which drug had the chief influence in curing the disease. The following case, however, stands on a different basis, the only antitetanic drug given being chloral hydrate. It is therefore possible to form some estimate of the action of that drug on the disease and on this account the record may be of some value in throwing light on the subject and in affording a suggestion for the treatment of tetanus in the future.

The patient, a powerfully built man, 21 years of age, was brought to me by Mr. P. B. T. Stubbs of Wynberg on May 27th, 1904, at about 11 A.M., suffering from violent abdominal pain. He was sent to the Woodstock Hospital where on examination we found a board-like hardness of the muscles of the abdomen with a tender spot at about the centre of the right hypochondriac region; pressure over this spot brought on tonic spasms which extended thence over the whole body. Neither trismus nor opisthotonos was very marked. The history elicited was that 48 hours prior to the attack the patient had been in his usual robust health; he then began to feel ill and about 18 hours prior to admission to hospital had severe rigors and abdominal pains followed by muscular spasms which rapidly became very severe and painful. There was no history of injury and, with the exception of one or two thorn scratches on the hand, there was no mark of any. The only possible diagnosis was that of tetanus, the poison having probably been conveyed into the system by one of the natural orifices. The temperature was 97·4° F. and the pulse-rate was 86. The patient was ordered 20-grain doses of chloral hydrate by the mouth every three hours. This had not the slightest effect, the spasms becoming more frequent and severe. At 6 P.M. a further consultation was held in which Dr. Casalis joined; the latter agreed in the diagnosis and we decided to increase the doses of chloral hydrate to 60 grains every four hours. The first dose was administered by the mouth in the form of six drachms of the B.P. syrup of chloral with half an ounce of brandy. This dose was immediately preceded and followed by a most violent tetanic spasm, accompanied by marked opisthotonos. The dose was repeated at 9 P.M., at 1 A.M., and at 5 A.M., the last two doses being given per rectum. In 11 hours 240 grains of chloral were administered. With the exception of the one immediately after the first dose of 60 grains no spasms occurred, the patient slept for about seven hours, his pulse remained steady at 88, and the temperature at about 98·6°. 25 ounces of urine were drawn off by catheter at midnight; the first portion was blood-stained. At 8 A.M. on the 28th the patient appeared to be well under the influence of chloral and I gave orders to stop the administration of the drug until the spasms reappeared. At 12.30 P.M. 18 ounces of clear urine were drawn off and a slight spasm occurred. Milk and hot water administered by the mouth were mostly returned and rectal feeding was adopted. The bowels were slightly opened after a soap-and-water enema. At 4 P.M.—i.e., 11 hours after the last dose of chloral—a severe tetanic spasm occurred; 60 grains of chloral hydrate were administered by the rectum; some slight spasms occurred after this. At 10 P.M. a dose of 40 grains of chloral was given and this dose was repeated every four hours till 6 A.M. on the 29th; the dose was then reduced to 30 grains given at 2 P.M. and at 6 P.M. No spasms had occurred for 18 hours and the administration of the drug was again discontinued. Two doses of one minim each of croton oil in a little butter were given during the night, with the result that the bowels were well opened with the assistance of an enema on the morning of the 29th. At 4 A.M. on the 30th a slight spasm occurred and 30 grains of chloral were administered. Another spasm occurred at 11.30 A.M. and the dose was repeated. At 5.30 P.M. the last spasm occurred and the last dose of 30 grains of chloral was given. The patient complained of feeling sore all over and was for the first time really conscious. He had no recollection of anything since

the afternoon of May 26th, a period of rather more than four days, although during the greater part of the time he appeared to be partially conscious. He made a rapid recovery, his only trouble being inability at first to pass urine without the assistance of the catheter and a tendency to constipation. These symptoms subsided and he returned home on June 3rd in perfect health. His illness lasted altogether about 10 days.

During the last few years the discoveries of bacteriologists, particularly with regard to antitoxic sera, have at times threatened to revolutionise certain branches of medicine and have induced a tendency among medical men to put aside some of our old and well-tried therapeutic agents in the hope of replacing them by more scientific substitutes. The use of chloral hydrate in tetanus is, I think, a case in point. Anti-tetanic serum has not in practice realised the hopes raised in its favour by laboratory experiments and the result of this case induces me to put in a plea on behalf of the drug which in this instance, at any rate, proved equal to the task of controlling the symptoms and arresting the disease.

I am not aware of any records in which such large doses as 60 grains of chloral hydrate have been given every four hours until 240 grains had been absorbed within 11 hours and this without any depressing effect on either the temperature or pulse. In the normal condition of the system such an enormous quantity taken in the same time would surely produce a fatal result, the evident explanation of a contrary effect in this case being that the system under the influence of the tetanic poison is capable of bearing enormous doses without any ill-effect, provided, of course, that one can draw any definite conclusion from a single case. In other words, chloral hydrate and the poison of tetanus are directly antidotal and it would be interesting to see further work carried out to prove or disprove the truth of this assertion. In order to do this I would suggest the advisability of commencing the treatment of an adult case of tetanus by doses of about 30 or 40 grains of chloral hydrate and steadily increasing this to a drachm or more until the desired effect was produced, repeating the dose when the spasms recurred, and gradually reducing the quantity as the spasms became less violent in character. In this particular instance 20-grain doses had not the least effect, but 60 grains completely controlled the symptoms. It was possibly a favourable case for treatment, but it at any rate demonstrated the fact that chloral hydrate is a very antitetanic remedy and one well worth further investigation on the lines suggested.

Woodstock, Cape Colony.

THE THERAPEUTICS OF ASPIRIN AND MESOTAN.[1]

BY JAMES BURNET, M.A., M.B., B.CH. EDIN., M.R.C.P. EDIN.,

SENIOR CLINICAL TUTOR, EXTRA-MURAL WARDS, ROYAL INFIRMARY; REGISTRAR, ROYAL HOSPITAL FOR SICK CHILDREN; AND PHYSICIAN TO THE MARSHALL-STREET DISPENSARY, EDINBURGH.

IT was in March, 1876, that is, nearly 30 years ago, that the late Dr. T. J. Maclagan contributed to THE LANCET a paper, entitled "The Treatment of Acute Rheumatism by Salicin." The opening sentences of that paper I may be allowed to quote, as they are historically interesting: "In the course of an investigation into the causation and pathology of acute febrile ailments, which have for some time engaged my attention, I was led to give some consideration to intermittent and to rheumatic fever. The more I studied these ailments the more was I struck with the points of analogy which existed between them. On a detailed consideration of these I shall not now enter, suffice it to say that they were sufficiently marked to lead me to regard rheumatic fever as being, in its pathology, more closely allied to intermittent fever than to any other disease, an opinion which further reflection and extended experience have served only to strengthen."

Since these words were penned marked improvements have taken place in the science of therapeutics. But the treatment of rheumatism is now universally standardised, salicin, or some other of the salicyl compounds, as they are termed, being employed in every case. The series of these compounds is a large one, its basis being the radicle salicyl ($C_7H_5O_2$). Salicin itself has the formula $C_{13}H_{18}O_7$, while that of salicylic acid is $C_7H_6O_3$. Salicylate of sodium, a remedy which has to a large extent replaced both salicin and salicylic acid, has a complicated chemical formula, represented by $(NaC_7H_5O_3)_2H_2O$. Methyl salicylate, or oil of winter-green, possesses the formula $CH_3C_7H_5O_3$. Salol, another member of this group, is the phenyl ether of salicylic acid. The preparations named are the more familiar of the salicyl compounds. To-day, however, I am able to speak of two newer remedies belonging to this series—viz., aspirin and mesotan, both of which have been introduced with a view of replacing those already mentioned. Aspirin is the acetic ester, while mesotan is the methoxy-methylester of salicylic acid. I shall now give a brief account of these two preparations in order to show their value in the treatment of disease and more especially in their application to rheumatism and rheumatic affections.

Aspirin, as I have already stated, is the acetic ester of salicylic acid: in other words, it is a combination of acetic and salicylic acids. It occurs in the form of fine white acicular crystals, possessing a distinctly acid odour and an agreeable acid taste. It is soluble to the extent of 1 per cent. in water at 37° C., while it is easily soluble in alcohol and in ether. Dilute alkaline solutions also readily dissolve it, splitting it up into its component parts, a matter of considerable practical importance and one to which I shall have again to refer. It is only slightly soluble in an acid medium. When, therefore, it is taken into the stomach the salicylic acid is not liberated; in fact, it is not until this compound reaches the intestinal canal that it becomes split up and the salicylic acid is set free. Aspirin differs chiefly from other salicyl compounds in that it is much less irritating to the gastric mucous membrane. It has been found experimentally that it takes at least two hours for artificial gastric juices to liberate even a minute quantity of salicylic acid from aspirin, but as it is not the least likely that an ordinary dose would remain for this length of time in the stomach we can readily understand that, generally speaking, this compound does not produce the gastric discomfort so often experienced after taking a dose of salicylic acid or of sodium salicylate. In the intestinal canal, however, the disintegration of aspirin is effected very rapidly, the salicylic acid entering into its composition being there set free. According to certain observers the elimination of aspirin takes place much more slowly than that of sodium salicylate and consequently its salicylic acid component circulates for a longer period in the blood than does an equal amount of salicylate. Again, it has been proved by experiment that whereas salicylate of sodium acts as a cardiac depressant aspirin tends to increase the heart's activity. Another point of distinction is that tinnitus aurium, which so frequently occurs during the administration of sodium salicylate, is rarely if ever met with when aspirin is administered. This is probably due to the difference in the rate of absorption of the two remedies. In the case of the former the salicylic acid is absorbed very rapidly, so that the circulation becomes suddenly affected thereby, whereas in the case of aspirin absorption of the salicylic acid takes place more gradually. It would appear that the liberation and elimination of the salicylic acid contained in aspirin take place with considerable rapidity, as in many cases we have been able to detect its presence by the ferric perchloride test within an hour after an ordinary dose had been administered. Another interesting fact regarding aspirin is that it produces an increased excretion of uric acid.

I have already referred to the fact that in presence of dilute alkalies aspirin becomes rapidly disintegrated. Too much importance cannot be attached to this matter as I have time and again found medical men prescribing it in combination with bicarbonate of potash. The result of doing so is to liberate the salicylic acid almost as soon as the powder enters the stomach, with the disastrous effect of producing considerable gastric irritation and discomfort. Personally I have been in the habit of giving it suspended in a glass of lemon water. It may, however, be placed dry on the tongue, or administered in cachets, or in wafer papers. I would particularly warn against prescribing it in tablet form, as not only do the patients thereby get to know what they are taking but one can never be certain when a tablet may dissolve, and there is consequently a risk lest the dissolution of two or three tablets may take place at once, an occurrence which might not prove advantageous to the patient.

[1] A paper read before the Therapeutical Society on March 28th, 1905.

In a few cases I have given it in *cold* milk and have found, especially in the case of children, that this method of administration was distinctly beneficial. Hot fluids, of course, must be avoided, as these as well as moisture tend to decompose the drug.

As regards the dosage of aspirin little need be said. The average single adult dose is from 10 to 15 grains. In cases where its administration requires to be frequently repeated the dose ranges from five to ten grains, although a larger amount may be given at frequent intervals in certain cases. To children I usually give from three to five grains, but in many instances I have given as much as ten grains without any bad effects and with considerable benefit to the patient.

I shall now consider the therapeutic indications for the administration of aspirin. It is in rheumatism and rheumatic affections that this remedy is more especially to be employed. Personally I have prescribed this preparation to over 200 adults suffering from rheumatism in one or other of its varying manifestations. Regarding my employment of this remedy in acute rheumatism I can speak in terms of the highest praise. When a patient is seen at the outset with a temperature of 103° F., swollen joints, and profuse sour-smelling sweat he is at once put between blankets and the affected joints are wrapped up in cotton-wool. Aspirin in 10 to 15 grain doses is then given every four hours. Within three days the temperature in almost every case becomes normal. The drug is then administered thrice daily for a week longer and then a dose varying from five to ten grains is given for the next three weeks. Experience has shown that if we stop the administration too soon or give the drug in too small doses a relapse is almost certain to take place. My practice of late has accordingly been to push the drug and almost invariably I have given it in lemon-water. In particular I have found that when the patient is in bed and between blankets very copious perspiration results from a half to one hour after the first dose has been given and the temperature is thereby reduced. When, however, aspirin is given to patients who are going about there is not nearly the same tendency to sweating. There can be little doubt that the amount of sweating produced is apt to prove extremely disagreeable to the patient, as the clothing and blankets soon become wet just as if they had been wrung out of water. To counterbalance this, however, the almost immediate relief from pain which the patient experiences is highly satisfactory. In chronic rheumatic affections aspirin also acts well and many cases of lumbago and pleurodynia are benefited by its use.

I have had considerable experience of the value of aspirin in the treatment of rheumatic affections of childhood and I shall now refer to its employment in this connexion at somewhat greater length. It is now four years ago since I began to employ aspirin in the treatment of chorea, which may be taken as a rheumatic condition in practically every case. The first case of chorea which I treated with aspirin was that of a girl, aged 13 years. She had been under treatment previously for the same condition. She was small for her age and had a definite history of acute rheumatism. There were well-marked mitral presystolic and systolic murmurs, while the heart was considerably enlarged. She was, moreover, very anæmic. It was considered advisable to keep her in bed and to put her on iron and digitalis, as she suffered considerably from breathlessness. Under this treatment she improved slightly but at the end of a month I could not pronounce her condition as being at all satisfactory. Accordingly the iron and digitalis were stopped and instead I ordered ten grains of aspirin to be given every four hours. She began almost immediately to improve, so that in three weeks' time she was comparatively well and in two months she was completely restored to health. Even the anæmia was scarcely perceptible, although the cardiac murmurs still remained. This case naturally impressed me and since then I have treated several cases of chorea successfully by means of aspirin. Arsenic, which is usually given in this disease, is no doubt beneficial in many cases but it has been known to fail. I have yet to meet with a case of chorea in which aspirin, given in suitable doses, failed to bring about alleviation of the patient's condition. It must be distinctly borne in mind, however, that if this remedy is to do any good it must be given in fairly large doses, say from 10 even up to 15 grains. Children, as a rule, take it well and I have never yet found it to produce anything like toxic symptoms. I am quite prepared to admit that it is exceedingly hazardous to maintain that chorea may be cured by the administration of any particular drug; still, I consider that aspirin has a powerful influence over this disease, more so indeed than any other single remedy with which I am acquainted.

In the acute rheumatism of childhood I have likewise obtained good results from the use of aspirin. I have given it in from five- to ten-grain doses every three or four hours and have found that the temperature was thereby rapidly reduced and the symptoms were greatly alleviated. I have especially found the value of aspirin displayed in cases of acute sore-throat of rheumatic origin, so often met with in children. I believe that pharyngitis is one of the commonest manifestations of acute rheumatism in childhood and have frequently observed children who complain of nothing save sore-throat develop in a day or two other more characteristic manifestations of rheumatism. Further, I maintain that many cases of tonsillitis attended, as these so often are, by malaise and a general soreness all over the body are in reality examples of acute rheumatism, quite as important from a therapeutic point of view as an arthritic attack. It is, however, always a matter of difficulty when we find a child suffering from acute sore-throat to say whether the case is a simple or a rheumatic one. That many of these attacks yield to anti-rheumatic remedies is to my mind a matter of considerable importance in settling this question. In such cases aspirin proves of great value. I have known patients with a temperature of from 102° to 103° F. obtain relief within 24 hours from the administration of frequently repeated doses, varying from five to ten grains, of this remedy. At the same time, moreover, the local condition improves, even when no application has been made to the throat, although as a rule some glycerine pigment will be found a helpful adjunct to the internal treatment.

Children not infrequently suffer from rheumatic torticollis, which is a very painful affection. Aspirin will be found of the greatest possible service in this condition. So, too, I have found it helpful in the treatment of certain cases which I have ventured to term gastro-enteric spasm. In this condition the patient complains of acute gastric pain after a meal and has an urgent call to stool. These cases are certainly not all rheumatic in origin but many of them undoubtedly are, and in some of these aspirin has a decidedly curative effect. There is, again, no remedy so useful as aspirin in the so-called growing pains of childhood. No doubt salicylate of soda acts well in such cases but it is usually badly taken by children and tends to upset the stomach, whereas aspirin has no such tendency and moreover is more pleasant of administration. In the psoriasis of childhood, which I have always maintained to be of rheumatic origin, I have time and again proved the marked success attending the administration of aspirin in full doses. Small doses are valueless and only failure will result if the remedy is not given in from 10 to 15 grain doses thrice daily.

Regarding the use of aspirin in rheumatic eye affections I personally speak with considerable diffidence as I have only treated two cases altogether, one being a rheumatic iritis and the other a conjunctivitis occurring in a rheumatic subject. Fortunately, however, for my present purpose we have testimony as to its efficacy from authorities much more able to speak on this subject than I am. Thus, Frank[2] of New York has recorded his successful experience of the treatment of rheumatic iritis by means of aspirin which he administered in eight-grain doses four times a day, combining it with the external application of mesotan to the part of the face immediately bordering on the affected eye. Again, Neustatter[3] of Munich speaks highly of this remedy in ophthalmic practice after its employment for more than two years. He finds it of value in iritis, episcleritis, and certain other conditions. In the majority of these cases it has a favourable influence on the morbid processes not only indirectly but also directly by curtailing the duration of the disease and contributing to the more speedy removal of the severer symptoms. He asserts that aspirin acts in these cases as an analgesic, while in some it seems to produce an hypnotic effect as well.

Although aspirin undoubtedly finds its chief indication in rheumatism and rheumatic affections it has been employed with more or less success in certain other conditions. I must now briefly refer to these. In this connexion I may specially mention its employment in the treatment of the hectic fever which forms so prominent a feature in cases of pulmonary

[2] The American Journal of Ophthalmology, June, 1904.
[3] Münchener Medicinische Wochenschrift, 1903, No. 42.

tuberculosis. I believe it was first used in this connexion by Renon[4] of Paris. He administered aspirin in from seven and a half to fifteen grain doses between 12 noon and 5 P.M. In three-fourths of his cases he observed an immediate anti-thermic effect. The temperature decreased by one, two, and even three degrees in the afternoon, with a tendency to rise again in the evening towards 8 or 9 o'clock. The temperature, axillary or rectal, gave a diagram inverse to the normal type with a maximum rise in the morning. When, however, the drug was discontinued the temperature rose nearly always to the high degree it showed before its use. I have been able to investigate the action of aspirin on the temperature of tuberculous patients. Thus, in a case of abdominal tuberculosis I gave aspirin in five grain doses every four hours and found that so long as its administration was kept up I could rely pretty confidently on controlling the temperature. No excessive perspiration ever took place, nor was I able to detect salicylic acid in the urine, although it was carefully looked for every day. I also tried the effect of aspirin in reducing the temperature of pulmonary cases. In every instance when it was given in five grain doses every four hours the temperature was reduced by one or two degrees, but in no case can I say that I was able to effect a return to the normal by the use of aspirin alone. One fact I learned from the employment of aspirin in this connexion—viz., that small doses frequently repeated do not, as a rule, produce the excessive perspiration which large single doses bring about, especially when the patient is in bed between blankets. I cannot, however, say that any real advantage results from the employment of aspirin in cases of tuberculosis.

I shall now refer to the use of aspirin as an analgesic in conditions other than rheumatic. More especially on the continent it has been used successfully in alleviating the pain of uterine, rectal, and mammary cancer. In such cases it proves most satisfactory when given in fairly large doses, say 15 grains every four hours. Again, in many cases of neuralgia it acts well and within the last few years it has found a considerable field of usefulness in dental practice. Thus it has been administered with a view to alleviate the pain after the application of arsenic to the nerve in cases of carious teeth. It is also said to be of service in the treatment of some varieties of toothache. In all such cases it must be given in from 15 to 20 grain doses in order to achieve satisfactory results. I have prescribed it in several cases of neuralgia with varying effect. Practically speaking, however, I find it specially suitable in cases of sciatica and in cases of supra-orbital neuralgia. I think I have also seen benefit follow its use in two cases of peripheral neuritis, although in both of these hypodermics of strychnine were also employed. In every case in which I obtained analgesia from the use of aspirin I never gave less than 15 grains at a single dose. Its value in that form of influenza which is attended by myalgia is undoubted. A dose of ten grains given three times a day will be found very serviceable, not only in alleviating the pain but also in reducing the temperature. Its use has been suggested also in cases of pleurisy with effusion and no doubt the copious perspiration produced by its administration might be of value here.

Lastly, I wish to say a word or two regarding the treatment of diabetes mellitus and glycosuria by means of aspirin. Williamson[5] of Manchester has already written on this subject. In 11 cases, which were under careful observation for a long time, he obtained the following results:—(1) in four very severe cases of diabetes aspirin did not produce any decided effect on the excretion of sugar; (2) in three cases of chronic glycosuria the excretion of sugar ceased when aspirin was given, the diet being kept unchanged; and (3) in four cases of diabetes mellitus, of the milder form, the excretion of sugar appeared clearly to be diminished by the aspirin. The dose necessary to produce a decided diminution of the excretion of sugar he found to be 15 grains, given from four to six times a day. I have recently had one case of chronic glycosuria under my care and to this patient I gave 15 grains of aspirin four times a day, with the result that although he had been under treatment for this condition for a considerable time, still without change of dietary I was able to reduce the amount of sugar excreted to a mere trace. This to me is a significant proof of the value of aspirin in some of these cases at least.

In conclusion, let me briefly summarise the advantages which aspirin appears to me to possess: 1. If given in acidulated water it never produces any gastric disturbance, and only after the administration of large doses do we occasionally meet with untoward symptoms, such as tinnitus aurium. 2. It does not depress the heart nor does it produce any renal irritation. 3. It relieves pain and reduces temperature more rapidly and powerfully than does salicylate of soda. 4. In doses of from 10 to 15 grains given to febrile patients who are in bed between blankets aspirin produces copious perspiration within half an hour. This, however, does not result when the drug is taken in afebrile states and when the patient is going about, nor does it result when doses of five grains are given, even if the patient is in bed. 5. Aspirin is pleasant to take, whereas salicylate of soda, even when administered in cachets or in mixtures, is very liable to produce nausea. The advantage of this is that aspirin can be tolerated for a longer period than can the salicylates. In my opinion, therefore, aspirin entirely replaces all the other salicyl compounds, as it is a more powerful analgesic and antithermic agent than any of the others, while at the same time it is readily taken and has no tendency to produce gastric disturbance.

I shall now briefly refer to my experiences with mesotan[6] which, as I have already indicated, is the methoxy-methylester of salicylic acid. It is a pale yellowish fluid, possessing very little odour, and perfectly miscible with alcohol, ether, and vegetable oils. Until the introduction of mesotan oil of wintergreen was the salicyl compound most commonly employed for external application; the latter, however, possesses a disagreeable and penetrating odour. Mesotan is readily absorbed by the skin and thus naturally produces a very rapid effect upon the underlying tissues. Its absorption is proved by the fact that when the skin is examined after the application of mesotan to the cutaneous surface, salicylic acid is found to be present. Before use it should be diluted with an equal quantity of olive oil. It should either be painted on the affected part with a brush or gently rubbed over the surface of the skin, about a teaspoonful being used for a single application. When rubbed over healthy skin a slight redness takes place, accompanied by a warm sensation and an odour which is somewhat suggestive of oil of wintergreen but not by any means so pungent or disagreeable. When an examination of the urine is made the presence of salicylic acid can be detected within an hour or less after the inunction.

I have used mesotan in at least 100 cases and can therefore speak with some knowledge of its potency. In patients suffering from acute articular rheumatism I have painted on a mixture of equal parts of mesotan and olive oil thrice daily. After these applications the joints were not wrapped up in cotton-wool nor was any other covering applied. The result, so far as the alleviation of the pain was concerned, manifested itself as a rule on the second day of treatment, but there was practically no effect upon the temperature until aspirin was administered internally. I wish particularly to point out that the wrapping up of the affected joints in this disease appears to be unnecessary when mesotan is used. At all events, in the case of the patients under my care the joints were left exposed and yet no bad effects followed. I may also mention that in every case the salicylic reaction was obtained in the urine within two hours at the latest after the first application. This fact proves that mesotan is absorbed even after simple painting of it over the cutaneous surface.

In chronic articular rheumatism I have used a mixture of mesotan and olive oil, which was directed to be well rubbed into the affected parts. In one of these cases a slight amount of erythema appeared, but on stopping the inunctions for a few days it completely vanished. In the majority of instances more or less complete relief from pain and stiffness took place within three or four weeks, although a few of the patients derived little or no benefit from the treatment. We must, of course, expect failures with every remedy and probably some of my cases in which mesotan failed to act may not have been rheumatic in origin at all.

Of arthritis deformans I have only seen three cases recently. In all of these mesotan inunctions afforded considerable relief, but this unfortunately was only of a temporary nature; still, it was found more beneficial than oil of wintergreen which had been previously employed in two of

[4] Bulletins et Mémoires de la Société Médical des Hopitaux de Paris 1900, No. 22.

[5] Brit. Med. Jour., Dec. 27th, 1902.

[6] Its chemical formula is said to be $C_8H_4 < \begin{matrix} OH \\ COO \cdot CH_2 \cdot O \cdot CH_3 \end{matrix}$ and it contains 71 per cent. of salicylic acid.

the cases. In this disease, however, we cannot look for an absolutely complete cure as the condition of the joint has become pathologically fixed, so to speak, and consequently alleviation of the attendant symptoms is all that we can expect. Mesotan, however, appears to possess a certain power of affording temporary relief to the pain which is present in these cases, and must therefore, I think, be regarded as a valuable adjunct to treatment.

It is in cases of muscular rheumatism that I have had the most marked examples of success from the use of mesotan. I have prescribed it largely for lumbago and also for pleurodynia, as well as for other forms of muscular rheumatism. In most of these cases the mesotan and olive oil mixture was rubbed well over the affected part. In none of my cases was there any irritation of the skin produced and in a very small proportion was the result imperfect. Two cases of torticollis were completely cured within three days after vigorous applications of the oil to the neck. A somewhat disagreeable papular eruption made its appearance in one of my patients but it yielded readily to the application of a soothing ointment. Practically speaking, therefore, mesotan has afforded me uniform success in cases of muscular rheumatism. In fact, I regard it as a specific for such conditions and I much prefer it to internal medication or the application of liniments and of blisters.

Several cases of sore-throat of undoubted rheumatic origin yielded when mesotan was painted over the front of the neck. In some cases of acute pharyngitis and tonsillitis it proved unsuccessful and I have no doubt whatever that these were non-rheumatic. I am of opinion, therefore, that mesotan is a most valuable external application in those forms of sore-throat which occur in rheumatic subjects. It has been stated that mesotan is of no use in cases of sciatica; this, however, is not my experience, for though it has failed in some instances, in two more particularly it proved of the greatest possible service. I may mention that both of these patients had a very distinct rheumatic history. Two drachms of mesotan and olive oil were well rubbed in along the course of the nerve and after each inunction the patients always experienced marked relief; consequently I think mesotan is worthy of a trial in cases of sciatica where the patient is a rheumatic subject. Of five cases of acute pleurisy in which I employed mesotan externally not one obtained the slightest benefit. The oily mixture was either rubbed into the skin over the affected part or else painted on thrice daily for two or three days but no relief even of the pain was thereby afforded. It was in the hope that some of these cases might eventually prove to be rheumatic that I resorted to mesotan but in this expectation I was entirely disappointed. Facial neuralgia again is not in my experience a condition in which mesotan is of much service. None of my cases improved under its use, while one even asserted that the pain was always aggravated by it. Nor is it of any use in arthritis of gonorrhœal origin. I tried it experimentally in four cases of this kind and in no single instance did any result whatever follow its use.

My experience of mesotan, considerable as it has been, has afforded me valuable information as to its mode of employment and also as to the kind of case in which it may be expected to yield good results. I have no hesitation whatever in saying that it is in cases of muscular rheumatism that mesotan proves of most effect. True, it possesses a distinct value in other rheumatic conditions but not to the same extent and is then generally of use merely as an adjunct to internal remedies, such as aspirin.

A good deal has been written recently regarding the irritative effects which mesotan is apt to produce upon the skin. As I have seldom witnessed these perhaps I may be allowed to state what, in my humble opinion, are the causes which lead to cutaneous irritation when mesotan is employed. In the first place it should, as a general rule, be diluted with an equal part of olive oil before use. Then, again, the mixture should be merely painted over the area involved and not used as an inunction when the skin is at all sensitive or delicate. It is also advisable in most cases to apply the remedy to different portions of the affected area on each occasion and whenever any undue redness appears it is well to intermit its use altogether for a day or two. Moisture, it should be remembered, decomposes mesotan and its decomposition will undoubtedly lead to the appearance of skin eruptions. This, to my mind, is one of the principal causes for the complaints one sometimes hears regarding the so-called irritating properties of mesotan. For this reason mesotan should always be placed in a bottle which is absolutely dry and which is kept well corked when not in use. Again, this remedy should never be mixed with water, as this also tends to decompose it. Another important point which must be attended to is to see that the patient's skin is carefully dried with a towel before the mesotan is painted over it. Moreover, after its application the affected area should not be covered up by any impervious material which would allow the accumulation of sweat upon the surface of the skin. I think if these details are attended to mesotan will be found to be a useful remedial agent and one which does not, as a general rule, produce any untoward results. As an additional precaution, where this remedy has to be used for a lengthy period I always advise the applications to be discontinued at the end of a week and not renewed until after the lapse of two or three days.

I am confident that those of you who may not have had an opportunity of trying aspirin and mesotan will find that in these two agents we possess very potent remedies against rheumatism and rheumatic affections and that at the same time aspirin is of considerable value in certain other painful and febrile conditions.

Edinburgh.

A CASE OF HÆMATOMA OF THE OVARY SIMULATING AN ATTACK OF APPENDICITIS.

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THE patient, aged 19 years, an unmarried woman, was admitted into President ward, St. Bartholomew's Hospital, on Feb. 11th, 1905, under the care of Mr. H. J. Waring, complaining of abdominal pain and general malaise of two days' duration. She had been in her usual fair state of health up to Feb. 9th. In the afternoon of that day, while sitting at her work, she was seized with sudden colicky pain in the right iliac fossa which lasted for approximately ten minutes. Then the acuteness of the attack wore off and she was left with a dull aching and a feeling of soreness in the same region which remained until the date of her admission. This pain was severe and was made worse by direct pressure and by movement. She vomited once at the time of onset and once subsequently in the evening of the same day. She had been more constipated than usual during the preceding week; otherwise no further symptoms could be elicited. There were no history of any hæmorrhage or discharge from the vagina, no pain on micturition, and no pain in the left iliac fossa. She had never had a similar previous attack and had never suffered from "indigestion" or from a purulent vaginal discharge. The catamenia had been regular every 28 days and of average amount. There had been no pain. The last normal period occurred from Jan. 3rd to 6th and had since then been absent.

The patient was seen in the out-patient department and was immediately admitted. When examined in the ward she was lying comfortably in bed on her back with her right leg slightly drawn up. Her general condition was good. Although anæmic she did not look actually ill. The tongue was furred and showed no signs of cleaning. The pulse was 112, regular, and of fair volume and tension; it gradually dropped to 94 on the second day after admission. The temperature was 98·2° F. and remained subnormal throughout. Nothing abnormal was discovered in the thorax. The breasts were not active. The movement of the abdomen was fair but there was slight restriction in the lower part. No fulness was evident. There were considerable tenderness and muscular rigidity in the right iliac fossa, the most tender point being about two inches below the centre of a line drawn from the right anterior superior iliac spine to the umbilicus. No actual swelling was felt. On examination the vagina was found to admit two fingers, there being a very small crescentic hymen. No discharge was visible. The cervix was nulliparous, the canal being closed. There was considerable tenderness in the right lateral fornix. Bimanual examination was difficult owing to the patient holding herself extremely rigid. The uterus was normal in position and size. In the anterior part of the right posterior quadrant was a rounded, indefinite, elastic, tender swelling, which

appeared to be about one and a-half inches in diameter and was not continuous with the uterus. Per rectum there was tenderness in the region of Douglas's pouch but no actual swelling could be felt. The leucocyte count was 8000 per cubic millimetre and remained constant.

As regards the diagnosis, the patient was thought to be recovering from what was most probably a slight attack of appendicitis. Except for the continuous subnormal temperature the signs and the symptoms would do very well for the acute catarrhal form, occurring in a "south-east" appendix. But bearing in mind the missed period the possibility of an ectopic gestation was discussed, the symptoms fitting in with what would be expected in the case of an unruptured tubal pregnancy into the sac of which a small hæmorrhage had occurred. In these circumstances, after a couple of days' observation, it was decided to operate at once and not to risk any further delay. The abdomen was opened by an incision rather lower than the usual appendicectomy one, the muscles being divided in the direction of their fibres. The appendix was found lying in the "south-east" position and appeared to be quite normal, except that at its tip it was attached to a swelling in the pelvis by a recent adhesion. In, and projecting from, the upper and back part of the right broad ligament was a globular purplish swelling about two inches in diameter. It was extremely tense and contained fluid. The tumour was identified as an enlarged right ovary over the apex of which ran the right tube with its fimbria ovarica attached to the swelling. A good pedicle was obtained, transfixed, and the tumour was removed; in so doing, however, the ovary ruptured and about one ounce of dark fluid blood escaped. The left ovary feeling normal the abdomen was closed. The patient made a good recovery.

The ruptured specimen on being hardened quickly contracted down to the shape and size of an ordinary ovary. Continuous sections showed the normal ovarian stroma to be infiltrated with blood and at one edge of the hæmatoma a mass of lutean tissue was seen. No trace of chorionic villi could be discovered.

During the last two years five somewhat similar cases of ovarian hæmorrhage coming on at or about the time of a menstrual period have been admitted into this hospital. In two of these cases the gland was found actually ruptured and there was a mass of blood in Douglas's pouch, giving rise to a localised peritonitis. These cases are of interest as once more illustrating the extreme importance of carefully going into a woman's menstrual history in all cases of attacks of acute abdominal pain, even though the pain be not within the limits of the "genital sphere." Occasionally cases are seen closely resembling in many respects an acute abdominal condition, such as a perforated gastric ulcer. But on examition it is found that the patient is menstruating and if she is put to bed and kept at rest the condition, whatever it may be, completely clears up in a week or ten days.

I am indebted to Mr. Waring for his kindness in allowing me to publish this case.

St. Bartholomew's Hospital, E.C.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF GENERAL SEPTIC PERITONITIS ON THE TENTH DAY OF ENTERIC FEVER WITHOUT EVIDENCE OF PERFORATION OF THE BOWEL.

BY C. GORDON WATSON, F.R.C.S. ENG.,
SENIOR ASSISTANT SURGEON TO THE METROPOLITAN HOSPITAL.

THE patient, who was a boy, aged nine years, was admitted into the Metropolitan Hospital on Jan. 30th, 1905, with the following history. He began to suffer from headache and shivering on Jan. 21st but continued at school till Jan. 25th and then took to his bed. On Jan. 26th and 27th his principal symptoms were vomiting, delirium, and abdominal pain. On the 30th these symptoms increased in severity and the illness was certified to be enteric fever. The boy was thereupon removed to the North-Eastern Fever Hospital of the Metropolitan Asylums Board, from which he was at once sent to the Metropolitan Hospital with a provisional diagnosis of "appendicitis with peritonitis." I saw the patient immediately on admission. General peritonitis was evident. Laparotomy was decided on, though the case seemed hopeless. His condition before operation was as follows. The abdomen was uniformly distended, hard, and tender all over, scarcely moving on respiration, and dull on percussion in the lower half on both sides. The temperature was 102·6° F. and the pulse rate was 160. The tongue was brown and much furred, the patient was very restless, and facies Hippocratica was present. For the laparotomy an incision was made in the middle line below the umbilicus. The peritoneal cavity was found to be full of thin white odourless pus, with flakes of lymph on the intestines; there were no adhesions; the intestines were not much distended but were red and dull in places. Enlarged glands were felt in the mesentery and one which was pendulous at the root of the mesentery was removed for examination and proved to be tuberculous. The appendix was felt but was apparently not diseased. There was no free gas in the peritoneum nor was there any evidence of extravasation of intestinal contents. Two counter incisions were made, one in either flank, and the abdomen was rapidly irrigated with weak lysoform and finally with hot saline solution, some of which was left in. Three large drainage tubes were left in the incisions. The operation lasted 20 minutes. Restlessness and vomiting on the part of the patient continued and were temporarily relieved by a saline infusion but death occurred seven hours after operation.

At the necropsy much slightly blood-stained fluid was found in the abdomen; this fluid was quite odourless and there was no pus. The small intestines were slightly matted together by recent adhesions. The peritoneal surface was red and inflamed, especially near the ileo-cæcal valve. A careful search revealed no evidence of perforation and the bowel held water. When laid open the small intestine showed several early typhoid ulcers in the lower two feet and some swollen Peyer's patches. There were no sloughs. At one point the base of an ulcer seemed to be near the peritoneal coat, but the peritoneal coat was not visible from within at any point, nor was there any adherent spot which suggested a closed perforation. The large intestine was not involved. The spleen was very markedly enlarged. The glands in the mesentery were tuberculous but there was no evidence of recent activity or of rupture of any gland. Cultivations from the spleen and heart's blood gave pure cultures of the typhoid bacillus.

It may be remarked that peritonitis in enteric fever without evidence of perforation of the bowel is sufficiently rare to be worth recording, especially when occurring so early in the course of the disease. That no actual perforation had taken place in this case seems probable on account of (1) the absence of free gas or intestinal extravasation; (2) the nature of the pus (and the probable absence of bacillus coli); and (3) the condition of the ulcers and the peritoneal coat. It seems not unlikely that this was a case of pure typhoid peritonitis and had it been seen earlier might have been treated successfully. It is much to be regretted that no cultivations were made from the abdomen at the time of operation, but the case was very urgent and appliances were not at hand.

Welbeck-street, W.

A CASE OF FÆCAL OBSTRUCTION DUE TO "TIGER-NUTS."

BY EDWARD C. B. IBOTSON, M.B. LOND.

I WAS called on April 9th to see a boy, aged 12 years, who was said to be suffering from stoppage of the bowels. He was a stout, ruddy boy whose bowels were usually very regular but for two days there had been no action of them. He complained of pain in the abdomen and the "back passage." Various aperients, such as castor oil and senna, had been given without benefit. No vomiting had occurred. The abdomen was distended and tympanitic on percussion in all regions. No coils of intestine were visible. Remembering Hilton's maxim, "Never neglect to examine the rectum," I did so and found it to be distended and packed with a dry, hard, chaffy mass quite unlike fæces. A portion which was removed for examination proved to be light-coloured chippy scraps of nutshell and fibre, practically not agglutinated by

any fæcal material whatever. I elicited from the patient that he had had "a ha'porth of tiger-nuts"—he added that they "were very sweet and you got a lot for your money." I should imagine that he had eaten half a pound at least, probably more. Several large glycerine enemata, followed by soap-and-water, were necessary to effect thorough evacuation of the rectum. In two days he was able to take part in a swimming race. The director of the Royal Gardens at Kew states that the "nuts" are the tubers of *Cyperus esculentus*, a common tropical sedge. A lady nurse of my acquaintance tells me that she has known of several cases of obstruction of the bowels in boys from eating these nuts too greedily.

Dover.

A Mirror of HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

ST. MARY'S HOSPITAL.

A CASE OF IMPACTION OF A PIN IN THE VERMIFORM APPENDIX; FORMATION OF AN ABSCESS IN THE LIVER AFTER A LONG INTERVAL; RUPTURE OF THE ABSCESS INTO THE LEFT PLEURAL SAC; DEATH.

(Under the care of Dr. SIDNEY PHILLIPS.)

THE patient was a girl, aged 15 years. She felt well until Nov. 16th, 1904, when she was attacked by cold shivers and headache. She went to bed at once and had some pains about the umbilicus during the night. There was no vomiting. She was ordered medicine and a liquid diet by a medical man on the next day. Some diarrhœa followed and on the 24th there was pain in the left hypochondrium. The patient got gradually worse and she came under the care of Dr. Sidney Phillips at St. Mary's Hospital on the 29th. Her only complaint was of shortness of breath, but her pallor was intense; the temperature was 101·8° F., the pulse was 128, and the respirations were 40 per minute. There was dulness on percussion over the lower two-thirds of the left back and as high up as the fourth rib in the left axilla there was almost complete absence of breath sounds below the sixth rib, and above this there was bronchial breathing. The temperature rose in the evening to 103°. It seemed probable that she had an empyema, but an exploring needle introduced into the sixth space on the next day withdrew only blood from an evidently pneumonic lung. On Dec. 2nd loud tubular breathing was audible over the whole of the dull area in the left back, confirming the diagnosis of pneumonia. On the 3rd there was a crisis of the pneumonia, the temperature falling to normal, the pulse to 118, and the respirations to 30 per minute. But on the same night the patient became suddenly collapsed, the pulse being almost uncountable and the skin breaking into profuse sweats; her heart became displaced to the right, and Dr. E. Ash, the house physician, aspirated the left side of the chest below the angle of the scapula, withdrawing 25 ounces of pus. This gave considerable relief. On the next day the patient was anæsthetised and Dr. Ash, under the direction of Dr. Phillips, opened up the intercostal space previously aspirated, giving exit to 40 ounces more pus. There was no cavity as in an ordinary empyema, the solid lung being felt and seen close up to the ribs and only a very short drainage-tube could be inserted. Pus, however, discharged very freely and except for a temporary rise the temperature was normal but the pulse-rate kept up at 140 and there were signs of a pus collection in the left chest which was not drained by our wound. Mr. V. W. Low therefore, at the request of Dr. Phillips, made an incision in the fifth space in the left axilla and let out about 20 ounces of thick flocculated pus; the finger in the wound showed that this empyema cavity was quite shut off from the cavity previously opened. A large drainage-tube was inserted and the patient had a good night. On the next morning loud amphoric breathing was audible below the left clavicle due apparently to the pneumothorax produced by the opening up of the pleural sac. This passed off by the 7th. On the 8th the patient became much more dyspnœic, both lungs became the seat of coarse bubbling râles, seeming to be swamped by bronchial secretion, and death soon occurred.

At the necropsy by Dr. J. F. H. Broadbent the two separate openings into the left thorax were seen—one opening into a loculated empyema sac, the other into the general pleural cavity. The left lung was coated with lymph and the liver was enlarged. In the left lobe of the liver was an abscess containing about four ounces of pus and this lobe of the liver having become adherent to the diaphragm the abscess had burst through the latter into the left pleural sac. The vermiform appendix was swollen, thickened, and distended with fluid. On laying it open a pin one and a quarter inches long was found in it lying with the head downwards. The pin was rusty and was surrounded with fæcal concretion which had evidently been moulded on it while it laid in the appendix. There was no sign of acute inflammation or of pus in or around the appendix nor any perforation. It subsequently was ascertained from the relatives that the patient had two years before had an attack of what was considered to be appendicitis.

Remarks by Dr. PHILLIPS.—The pin had certainly lain a long time in the appendix and was probably the cause of the inflammatory attack from which the patient had suffered two years previously. After lying there for some time an acute infective process seems to have arisen in connexion with the appendix, giving rise to a hepatic abscess which burst into the pleural cavity and led to the symptoms of collapse which were relieved by aspiration. The pneumonia and loculated empyema must have arisen before this; the latter, though suspected, was not detectable at first, its percussion dulness merging into that produced by the consolidated lung. The abscess of the liver was not suspected, nor do I think that it would have been possible to detect it in the inaccessible position in which it formed.

A very similar case is reported by Dr. J. F. Payne[1] where post mortem a pin was found in the vermiform appendix surrounded by fæcal concretion. No symptoms had occurred except pain on the right side followed by pyrexia, signs of pyæmia, and death in three or four weeks, the necropsy showing a large abscess and two or three small ones in the liver and a small one also in the left lung. As in my own case, there was no sign of suppuration in or around the appendix. Hepatic suppuration is a very rare result of appendix inflammation. Treves computes it at 0·5 per cent. of cases. When it does occur there is usually suppuration in or about the appendix and the liver is permeated by channels of pus—suppurative pylephlebitis. It is much more rare for localised abscess to form in the liver, as in Dr. Payne's and the present case. In neither of these cases was there any pus formation around the appendix and the liver abscess probably resulted, as Dr. Payne suggests, from embolic detachment of part of a clot produced by the presence of the pin.

PS.—Since the above was written a case of appendicitis has been recorded in THE LANCET of April 29th, 1905, p. 147.

DAVID LEWIS NORTHERN HOSPITAL, LIVERPOOL.

A CASE OF ABDOMINO-PERINEAL EXCISION OF THE RECTUM.

(Under the care of Mr. R. W. MURRAY.)

A MAN, aged 50 years, was admitted to the David Lewis Northern Hospital on Dec. 16th, 1904, on account of constipation and a feeling of discomfort in the rectum. For the past six months he had suffered from alternating attacks of diarrhœa and constipation and had noticed that the motions which he passed were becoming smaller and more elongated; relief was obtained with difficulty. He had occasionally passed slime but no blood. His general health had suffered and he was rapidly losing flesh. On admission he was a man of sallow complexion and looked older than his years. His chief complaint was a feeling of fulness in the rectum and an inability satisfactorily to empty the bowel. On examination a hard circular constriction of the rectum could be felt just within reach of the finger, but the upper limit of the growth

[1] Transactions of the Pathological Society of London, vol. xxi., p. 231.

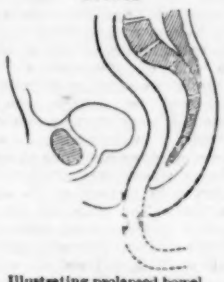
could not be determined. The mass appeared to be freely moveable and as there was no evidence of secondary deposits elsewhere the case was considered a suitable one for operation. There was no abdominal distension or other evidence of marked fæcal accumulation.

Operation.—On Dec. 20th the patient was anæsthetised and placed in the Trendelenburg position. The abdomen was opened in the middle line below the umbilicus by an incision five inches in length. An excellent view of the rectum and the pelvic colon was thus obtained, and the position of the portion of the bowel involved in the growth was clearly seen as it lay in the hollow of the sacrum covered by the peritoneum (Fig. 1). An incision was made on either side of the bowel through the peritoneum parallel to, and about half an inch from, the margin of the rectum, commencing well above the growth and reaching down to the reflection of the peritoneum on to the bladder; at this point a transverse incision was made through the peritoneum joining the other two. With the finger the rectum and contained growth, together with several small enlarged glands, were now easily separated

FIG. 1.

Position of the growth.

FIG. 2.



Illustrating prolapsed bowel and growth.

from the hollow of the sacrum. The separation of the rectum was continued right down to the anus and the pelvic colon was freed until it was estimated that sufficient "slack" had thus been obtained to enable the bowel well above the growth to reach to the anal orifice easily. The abdominal wound was then completely closed. The patient was now placed in the lithotomy position and after widely dilating the anus a circular incision was made through the mucous membrane close to the anal margin, the mucous membrane was reflected for about an inch, and the rectum was then divided completely at this point. The rectum was pulled through the anus until the growth and healthy bowel above it were reached (Fig. 2). The protruding mass was then cut away well above the growth and the divided end was attached to the anal margin. A small gauze drain was inserted posteriorly between the cut edges.

The patient stood the operation well and made a very satisfactory recovery. For the first week following the operation he suffered from retention of urine and owing probably to the necessarily wide dilatation of the anus it was about three weeks before he had complete control over the anal sphincter. Offensive diarrhœa was another early complication, but this was found to be due to the accumulation of large hard masses of fæces in the rectum for the removal of which it was necessary to administer an anæsthetic. His general health and comfort have so greatly improved by the operation that he has been able to resume his former occupation of a millwright.

Remarks by MR. MURRAY.—Though it is no doubt true that in certain cases of carcinoma of the rectum when the growth is situated well within reach of the finger a good result may be obtained by the perineal or trans-sacral method of operating, still, if the truth could be known, it would almost certainly show that in the vast majority of cases the results obtained have not been satisfactory. The probable reasons for this are that in the first place this route does not permit of a clear view of the whole of the diseased area, and secondly, that only in exceptional cases can the divided end of the bowel above the growth be brought to the natural position of the anus. The abdomino-perineal method, on the other hand, with the patient in the Trendelenburg position, not only affords a good view of the diseased area and so enables the surgeon to see clearly what he is doing, but permits of the pelvic colon being freed so that the bowel well above the growth may be brought down to the level of the anus.

Sir Charles B. Ball in the Erasmus Wilson lectures on Adenoma and Adeno-Carcinoma of the Rectum, delivered in 1903, expressed himself as being by no means satisfied with the trans-sacral method, but concluded by speaking in most encouraging terms of the abdomino-perineal route, and in the same year an instructive paper appeared by by Dr. Louisa B. Aldrich-Blake,[1] in which a very clear account of the operation was given. Dr. Aldrich-Blake's operation differs in one important particular from that recommended by Sir Charles Ball. After opening the abdomen with the patient in the Trendelenburg position, and having freed the bowel well above and below the growth, Sir Charles Ball recommended division of the bowel *in situ*, after tying it above and, if possible, below the growth, in doing which there would certainly be a risk of soiling the peritoneum. Dr. Aldrich-Blake, on the other hand, after thoroughly freeing the bowel and growth, closes the abdominal wound and the growth is removed through the anus, thus avoiding all fear of peritoneal infection.

Though my experience of the abdomino-perineal operation has been limited to one case, I have been so favourably impressed with its advantages that I have ventured to give a brief account of the case in which I adopted it. The outstanding features of the operation are: (1) the extent of the disease can be clearly seen; (2) the whole of the diseased area can be freely removed, and this without soiling the peritoneum; (3) the anus is in the natural position; and (4) by denuding the small anal stump left of its mucous membrane, a procedure adopted by Moulonguet, a raw surface remains to which the prolapsed upper segment will attach itself, and at the same time the anal sphincter is retained.

In conclusion, I have to express my sense of indebtedness to Dr. Aldrich-Blake, for it was entirely owing to her clear description of the operation that I obtained the success which I did.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Heterotype Mitosis in Warty Growths.—Squamous-celled Carcinoma associated with Exposure to the X Rays.—New Species of Streptothrix isolated from the Air.—Further Contribution to the Pathology of Streptothrix Infection.

A MEETING of this society was held on May 2nd in the Pathological Laboratory at the Middlesex Hospital, Sir JOHN BURDON SANDERSON, the President, being in the chair.

Dr. W. F. VICTOR BONNEY showed slides illustrating Nuclear Division in so-called "Gonorrhœal" Warts. Although the present investigation was by no means complete the slides that he showed exhibited a form of division apparently identical with the heterotype and homotype form of mitosis which was natural to gametic cells and which had recently been shown by Farmer, Moore, and Walker to occur freely in the cells of malignant new growths. He pointed out that if further investigation established this fact an explanation of the infective character of these neoplasms was at hand and would place them upon the same pathological footing as the intracystic papillomata occurring in certain ovarian cysts, in the epithelial cells of which the speaker had previously demonstrated the gametic type of mitosis at a previous meeting of the society. Although still called "gonorrhœal" these warts were well known to have no necessary connexion with gonorrhœal infection. Microscopically they presented the features of neoplasms and not inflammatory tumours, and he reminded the society that they occasionally exhibited a local infectivity and rapidity of growth that approached very closely to malignancy. It was therefore highly probable that the infective agent in these growths was the epithelial cell itself rather than a parasite and that this infective character was in some way closely associated with these abnormal nuclear changes. In view of the fact that gametoid mitosis occurred very freely in the locally infective ovarian intracystic papillomata and as now appeared in this form of infective wart also, he thought

[1] Brit. Med. Jour., Dec. 19th, 1903.

that these types of nuclear division must be held to be associated with the *infectivity* of a neoplasm rather than with the complex term *malignancy*.

Mr. A. G. R. FOULERTON showed sections from a case of Squamous-Celled Carcinoma of the Finger associated with frequent and prolonged exposure to the x rays. The patient was a surgeon who had commenced systematic work with the rays in 1897. In May, 1903, a severe attack of dermatitis followed the performance of a long operation in the course of which the back of the left hand was closely exposed to the rays. Blistering of the skin of the back of the index and second fingers followed. The resulting ulcers healed after some four months, and the new skin was thin and tender and showed nævoid-looking petechiæ; the nails fell out and the new ones which formed were hard and brittle. A second attack of dermatitis, affecting especially the skin on the back of the index and second fingers of the left hand, followed another prolonged single exposure to the rays in December, 1903, and ulcers formed on each finger again. The ulcer on the back of the second finger healed but that on the index finger remained open and in April, 1904, began to assume a malignant character. Between May and September the ulcer slowly increased in superficial area and in depth and in the latter month the finger was amputated at the metatarso-phalangeal joint. At the present time the skin of both hands was thin and of shiny appearance, numerous small nævoid-looking petechiæ were scattered over the dorsum of both the right and the left hand, and there was a small superficial ulcer over the middle phalanx of the second left finger. Otherwise the condition was quite satisfactory. Sections of the index finger showed a typical squamous-celled carcinoma; cell-nest formation was frequent and conspicuous and the appearances generally were such as are usually associated with squamous-celled carcinoma of a chronic type. Mr. Foulerton did not think that the x rays exerted any special specific influence stimulating the activity of epithelial cells; all the evidence available suggested that the action was rather of an inhibitory nature. At the same time this was the third case of the sort which had occurred amongst the comparatively small number of those who were working frequently with the x rays in London. The starting of malignant epithelial growth from the edge of a chronic ulcer was, of course, of comparatively common occurrence and the special liability of a chronic ulcer to assume a malignant character in these cases must be attributed to the general irritating effect of the x rays, the most obvious result of which was commonly seen in the dermatitis produced by exposure to their influence. In the present case it seemed probable that the ulcer having assumed a malignant character the growth of epithelium below the surface had been checked to some extent by the continued influence of the rays.

Mr. FOULERTON also showed Cultures of a New Species of Streptothrix, streptothrix Chalcea, which had been isolated from the air. Growth occurred freely on all the ordinary culture media and rather more freely at 37° C. than at 22° C. On nutrient agar the growth was of a copper colour, becoming a deep reddish-brown with age; gelatin was liquefied slowly; growth on potato was of a deep red colour, free, and of crystalline appearance; growth in broth produced typical round, flattened, streptothrix colonies; free growth occurred in milk, with the production of appearances often met with in the growth of members of this genus, the deposition of a very fine sediment from the milk and the gradual clearing of the medium. The thermic death point was between 60° and 70° C. The organism had a diastatic action on starch. The pathogenic action on lower animals had not yet been tested.

Mr. FOULERTON also read a paper entitled "A Further Contribution to the Pathology of Streptothrix Infections." Details were given of 33 cases which had been examined in the bacteriological department of the Middlesex Hospital during the last six years. Of these, six were probably cases of primary lung infection, there were four cases of appendicitis, and three cases of right iliac abscess in which connexion with disease of the appendix was probable but not proved, there was a single case of conjunctivitis, and there were 19 cases of lesions occurring about the mouth and neck in which it seemed probable that infection had occurred either through breach of the mucous membrane or through carious teeth. Of the 19 cases of mouth infection one was an abscess in the substance of the tongue, two cases represented an infection of the subcutaneous tissues of the neck, probably in one case following infection by the tonsil, there were two cases of abscess of the cheek, nine of the cases presented abscesses apparently connected with the mandible, and there were five cases of infection of the submaxillary region which might also have been connected with infection of the mandible. In nine of the cases no attempt to obtain cultures of the streptothrix was made but in all these a typical streptothrix parasite was seen in microscopic specimens. In the remaining 24 cases various culture media were inoculated in the hope of obtaining growth of the parasite present; in 12 of these cases the attempt either failed altogether or else the amount of growth obtained was so small that it was impossible to identify the species present. In the remaining 12 cases growth was obtained. The results were as follows: Streptothrix luteola (previously described) was obtained from the case of conjunctivitis and from one case of alveolar abscess of the mandible. Streptothrix hominis I. (also previously described) was obtained from two of the lung cases, from one case of infection of the subcutaneous tissue of the neck, from one abscess of the cheek, and from two abscesses connected with the mandible. Streptothrix hominis II., an organism of rather scanty growth, somewhat resembling streptothrix hominis I., was obtained from the case of abscess of the tongue. Streptothrix hominis III. was obtained from an interesting case in which the kidney was removed for suspected tuberculous disease. On examination of the kidney, however, the case proved to be one of streptothrix infection, the organism being demonstrated microscopically in the tissue of the kidney and recovered in culture. From a right iliac abscess an organism somewhat resembling the last but not sufficiently examined to determine its absolute identity was isolated. From another case, one of appendicitis, an organism, again closely resembling streptothrix hominis III. but differing from it in respect of its diastasic action on starch, was isolated. This case was one of considerable interest; the patient underwent an operation for appendicitis and shortly afterwards jaundice and severe symptoms supervened. The patient died and at the examination after death the appendix, which had been left, was found obstructed and thickened, the aortic and cœliac glands were enlarged and softened, and there was an abscess in the pancreas. The splenic vein came into close relation with this abscess and contained a purulent thrombus which had extended into the portal vein, which with its intra-hepatic branches was full of pus. Microscopic preparations of the pus from the pancreatic abscess and from the portal vein showed an immense quantity of the streptothrix, which was subsequently recovered in culture. In the series of cases examined the pathogenic action of the streptothrix had generally appeared to extend by continuity of tissue but, as in the last case, general infection was possible. Mr. Foulerton had not himself met with any of the cases, such as those recorded by Eppinger, Birt and Leishman, McDonald, Aoyama and Miyamoto, and others, in which widely spread infection had been associated with an acid-fast streptothrix. Owing to the kindness of Dr. McDonald he had, however, had the opportunity of examining the organism isolated from his case and he found that it corresponded in every respect with a culture which he had of Eppinger's streptothrix and caused a general infection in guinea-pigs.

CLINICAL SOCIETY OF LONDON.

Exhibition of Cases.

A MEETING of this society was held on April 28th, Dr. FREDERICK TAYLOR, the President, being in the chair.

Mr. J. JACKSON CLARKE exhibited three cases of Congenital Dislocation of the Hip reduced by the Method of Lorenz, with skiagrams. The first case was that of a girl, aged seven years, who had a typical displacement of the right hip, which was reduced in August, 1903. She was shown at the Clinical Society on Oct. 28th, 1904, with a skiagram, at which time the joint was stiff and abducted, exemplifying "the pubic position" with rigidity. Now the joint moved freely and without pain. The patient walked well and the restored joint was firm. The second case was that of a girl, aged eight years, who had been operated upon in August, 1903, for congenital dislocation of the right hip. This patient illustrated "the normal result"—i.e., the walking and the anatomical conditions, save for a slight degree of abduction which was purposely maintained, appeared to be the same as those of a normal child. The

third case was that of a girl, aged three and three-quarter years, who was operated upon for congenital dislocation of the right hip in June, 1904, with a good result.—Mr. T. H. OPENSHAW was of opinion that in one of the cases the head of the femur could be felt on the lip of the acetabulum. He referred to the frequency with which the neck of the bone was rotated in this condition and the prognosis varied according to the degree of rotation. After Lorenz's operation the head was never fully replaced in the acetabular cavity, but in spite of that the result was satisfactory inasmuch as the functions of the joint were restored.—Mr. JACKSON CLARKE agreed that often there was no true cavity into which the head could be placed; this could be well seen by dissecting the bodies of infants born with such a condition. But the actual anatomical condition was unimportant so long as perfect movements resulted. It was important to study the cases at some long interval after the operation.

Dr. H. MORLEY FLETCHER and Mr. H. BETHAM ROBINSON exhibited a case of Dilatation of the Large Intestine beginning at the Hepatic Flexure and ending in the Rectum at the Pelvic Floor. The patient, a boy, aged 12 years, had always had a large abdomen. In November, 1904, there was a marked increase in abdominal distension, accompanied by constipation and some pain in defæcation. Abdominal section disclosed the dilatation and the thickening of the large intestine. The circumference of the upper part of the rectum measured 19½ inches. The bowel was emptied per anum by manipulation, many pounds of soft dark fæces being forced out. The abdomen was then closed and the result had been very satisfactory.—Dr. J. PORTER PARKINSON remarked on the distension of the veins upon the upper abdomen and discussed the possibility of some other morbid condition being present in the liver or the upper part of the abdomen.—Mr. DOUGLAS DREW referred to a similar case in a child about four years of age upon whom he had operated recently. In discussing the possible causes he expressed the view that some condition causing spasm of the colon was in operation.—Mr. G. H. MAKINS said that in the cases of this kind which he had seen the hypertrophy had been more limited in extent. One case, that of a youth, aged 19 years, came under notice for obstruction and died after colotomy and cæcotomy had been performed. He advocated anastomosis of the sigmoid loop as the best surgical procedure.—Mr. ROBINSON remarked, in reply, that short-circuiting of the intestine in this case was out of the question because the hypertrophy existed as far as the anus.

Dr. J. FAWCETT exhibited a case of Sclerodactylia with Vaso-motor Phenomena. A man, aged 21 years, first noticed in May, 1904, that his hands readily became cold and in September that his fingers became "thick" and stiff so that there was difficulty in closing them. His hands had now a permanently bluish-white tint and were cold. The feet and the lips were similarly affected. The skin of the face and other parts was smooth, shiny, and tightly drawn. When warmed the hands became very moist. There was no ulceration. Treatment by massage, galvanism, thyroid extract, and nitroglycerine had been equally unsuccessful.

Dr. FAWCETT also exhibited a case of Xeroderma Pigmentosum (Kaposi's disease). A girl, aged 16 years, was first noticed to have freckles when aged two and a half years. Until 14 she was at school and had no surface lesion. For the last two years many small sores had appeared at intervals which on healing left depressed scars.

Dr. FAWCETT also exhibited a case of Swelling of the Left Hand and Wrist in a girl, aged 17 years, the swelling having come on without apparent cause a few months before and being possibly due to some lymphatic affection.

Dr. A. M. GOSSAGE exhibited a case of Stokes Adams' Disease. The patient, a woman, aged 58 years, went to the hospital a few weeks ago complaining of faintness; she had fallen several times and had had momentary loss of consciousness. Her heart was beating regularly at 40 per minute, the heart and the pulse corresponding. The pulse was strong and the arterial tension rather increased, with decided evidence of thickening and sclerosis of the vessel wall. The heart itself was not enlarged and there was no marked hypertrophy to be made out and no murmurs were to be heard.

Mr. DOUGLAS DREW exhibited a case of Tuberculosis of the Parotid Salivary Gland. The swelling had commenced in the patient, a boy, aged nine years, about eight months ago, simultaneously with a discharge from the left ear. His father had died from consumption.

Mr. J. R. LUNN showed a case of Thoracic Aneurysm in the Right Carotid and Subclavian Arteries, with weakness and blueness of the left hand and arm. The patient, aged 35 years, was admitted with urethral stricture following gonorrhœa but without a history of syphilis. Weakness and coldness of the left arm and abdominal pain had appeared five weeks ago. A loud systolic murmur was to be heard over the aortic area; the apex beat was in the sixth interspace below the nipple.

Mr. LUNN also showed a case of Tumour of the Tongue in a girl. The patient, aged 12 years, first noticed a lump on the tongue six months ago. About the middle of the dorsum of the tongue on the right side were two swellings, one behind the other, over which the papillæ were markedly hypertrophied. On palpation the swellings were felt to consist of indurated tissue without nodules. The right half of the tongue was larger than the left and the cervical glands on the right side were enlarged. There were some scars at the left angle of the mouth and evidences of past keratitis.—Mr. W. G. SPENCER regarded the condition as one of lymphangioma with incipient macroglossia.

Dr. T. D. SAVILL showed a case of Traumatic Stricture of the Œsophagus, possibly associated with Dilatation, relieved by Electricity. The patient, a woman, aged 49 years, in the year 1880 swallowed by mistake some vitriol. This was followed by extreme dysphagia and stricture, so that two years later a small bougie could only be passed with difficulty. After a time the difficulty in passing the bougie increased and when first seen in June, 1903, a bougie had not been passed and she had not swallowed solids for nine weeks and fluids could only be swallowed with the greatest difficulty. She had seen several surgeons and gastrostomy had been discussed. Electric treatment was quickly followed by improvement; in six weeks she could swallow minced meat and had gained seven pounds in weight. The improvement was maintained for 18 months, when a relapse required a renewal of the electricity and she could now take solids without having to pass a bougie.

Mr. CHARTERS J. SYMONDS exhibited a case of Ununited Fracture of the Tibia and Fibula in a man, aged 40 years, to which a walking apparatus had been fitted and there had since been marked progress towards union.—Mr. OPENSHAW endorsed the efficacy of this apparatus in such cases.

Mr. CHARLES GIBBS exhibited a case of Multiple Circumscribed Fibrous Masses in the Corpora Cavernosa in a man, aged 48 years.

Mr. T. CRISP ENGLISH exhibited a case of Traumatic Cephalhydrocele in a boy, aged eight and a half years, who, when six months old, fell 12 feet on to a stone floor and was unconscious for three hours.

Mr. SPENCER showed a case of Abnormality of the Left Testis. The patient, aged 21 years, had never felt, either in the left scrotum or groin, a testis like the right one.

Dr. CHARLES BOLTON exhibited a case of Absence of the Abdominal Muscles in a male child, aged three weeks. The recti abdominis were present but not the lateral muscles. There were hypertrophy and dilatation of the bladder and undescended testes.

LIVERPOOL MEDICAL INSTITUTION.

Hydatid Cyst of the Lung.—Second Dentition.—Instruments for Recording Blood Pressure.—Surgical Treatment of Chronic Constipation.—Exhibition of Specimens.

A MEETING of this society was held on April 27th, Dr. JAMES BARR, the President, being in the chair.

Dr. A. GORDON GULLAN read a note on a case of Hydatid Cyst of the Lung. The patient, a woman, aged 38 years, was admitted to hospital in June, 1903. She was then very thin, weighing only 7 stones, and the right lung showed signs of consolidation from the fourth rib to its base and there was a large cavity in the upper part. She expectorated hydatid cysts varying from the size of a pea to that of a walnut. The sputum on other occasions was muco-purulent. She was given an expectorant mixture, formalin inhalations, and intra-tracheal injections consisting of menthol 10 per cent., guaiacol 2 per cent., and olive oil 88 per cent., from one to two drachms being injected daily. No hydatids were expelled after July 20th and the patient made a satisfactory recovery, having since gained 2 stones 10 pounds in weight.—Mr. COLIN CAMPBELL said he had no experience of the treatment of hydatids of the lung but could hardly

believe that injections of such small quantities of oily solutions could produce much eliminative effect, they would simply float on the contents of the cavity. He had for years employed heavy glycerine solutions which by displacing muco-purulent secretions in pulmonary cavities brought antiseptic drugs into direct contact with the diseased tissues.

Dr. HUBERT ARMSTRONG read a note on the Second Dentition—its Medical Aspects. He dealt with the subject under the following headings: (1) general or local disease as a cause of faulty dentition; (2) faulty dentition as a cause of general or local disease; and (3) the influence of dentition upon concurrent general disease. Under the first heading reference was made to rickets, cretinism, syphilis, the exanthemata and other acute febrile diseases, adenoids, thumb-sucking, &c. The second section dealt with general symptoms, ulcerative stomatitis, anæmia, dyspepsia, and other symptoms and diseases associated with the second dentition; while in the third section the neuroses, epilepsy, chorea, and acute febrile illnesses were briefly mentioned. The importance of good health in insuring a sound dentition and *vice versâ* that of a sound dentition to the general health in after life were emphasised, and it was pointed out how in various ways the medical man could supplement the effort of the dental surgeon in this double object.

The PRESIDENT exhibited and explained the use of Several Instruments for Recording the Blood Pressure.

Dr. W. BLAIR BELL read a note on the Surgical Treatment of Chronic Constipation. He did not consider that ileo-sigmoidostomy was a suitable operation for dilated conditions of the big bowel owing to the "backing up" which occurred. He thought cæco-plication or excision of the dilated portion of the cæcum more rational. Ileo-sigmoidostomy, however, was valuable in those cases in which the big bowel was contracted and he related a case of this kind in which he had performed ileo-sigmoidostomy with satisfactory results. He was convinced that one operation, however, could never be successful in all cases of intractable constipation and that until the various pathological conditions obtaining in chronic constipation were accurately defined and rendered possible of recognition clinically surgical procedures could not be carried out on empirical lines.—Dr. W. ALEXANDER, Mr. F. T. PAUL, and Dr. R. E. HARCOURT took part in the discussion.

Mr. RUSHTON PARKER showed models of an old Roman Catheter, a Rectum Dilator, and an Unguent Injector. He also showed drawings, coloured photographs, and lantern slides of a few cases, some unusual, recently under observation. They comprised chancre of the mammary areola, sarcoma of the chest wall recurring after the excision of a cystic adenomyxoma of the breast, a galactocele containing inspissated milk, the brain and spinal cord from a case of cerebro-spinal meningitis, and a large prostate removed a week previously by suprapubic cystotomy.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF STATE MEDICINE.

Asylum Dysentery.—Poisoning by Carbon Monoxide.

A MEETING of this section was held on April 14th, Sir JOHN W. MOORE, the President, being in the chair.

Professor E. J. MCWEENEY showed a large series of Cultures of an Organism which he had isolated by the Drigalski plate method from the muco-purulent stools of a typical case of asylum dysentery. He also showed, for purposes of comparison, parallel cultures of genuine typhoid fever bacillus and of two strains of bacillus coli, one derived from human stools and highly pathogenic for rabbits, and the other freshly cultivated from a pure water-supply and presumably non-pathogenic. The organism of dysentery was thus shown to have the closest cultural resemblance to the organism of typhoid fever, the chief morphological difference being its non-motility. The chief cultural differences appeared on Endo's fuchsin medium and in mannite agar. Professor McWeeney discussed the question as to the identity of the organism isolated by him with that of Shiga and Kruse. For the material he was indebted to Dr. P. Heffernan, assistant medical officer at the Clonmel District Asylum.—Dr. A. R. PARSONS expressed the hope that Professor McWeeney would be able to keep a strain of this micro-organism growing, so that other cases of asylum dysentery might be tested against it.

Dr. W. J. THOMPSON described a case of Poisoning by Carbon Monoxide. The circumstances were unusual, in that the poisoning was due not to inhaling ordinary coal gas but to the patient being in a small room (17 feet by 8 feet by 7 feet) with a smouldering fire. It took place on one of the dredgers belonging to the Port and Docks Board. The patient was admitted to Jervis-street Hospital, Dublin, on Nov. 12th, 1904; he was in a state of deep coma and had a dusky, dark-greyish colour; the respirations were short, shallow, and stertorous, about 24 per minute; the pulse was small and thready; the first sound of the heart was lost; the pupils were irregular; the surface of the body was cold and the abdomen retracted; there was also suppression of urine. He was treated by hypodermic injections of digitalin, strychnine, and ether, by continued artificial respiration with inhalation of oxygen, by blood-letting, and by the application of heat to all parts of the body. The blood when drawn off had the characteristic bright red colour of carbon monoxide poisoning. The patient regained consciousness towards evening and left the hospital in 15 days perfectly well. On the first day he only passed nine ounces of urine, on the second 15 ounces, and on the third 23 ounces, and afterwards the normal quantity; no sugar or albumin was detected and the amount of urea per ounce was normal.—Professor MCWEENEY stated that he had made an examination of the blood from Dr. Thompson's patient. The first specimen he examined was too small in amount for detailed examination but presented all the appearances of the presence of carbon monoxide gas combined with the hæmoglobin. At a subsequent examination no trace of carbon monoxide gas was found and the leucocyte count was also normal.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—A meeting of this society was held on April 14th, Dr. J. F. J. Sykes, the President, being in the chair.—Mr. G. H. Fosbroke, county medical officer of health of Worcestershire, read a paper on the Midwives Act of 1902. The full provisions of the Act would not, he said, come into force until April, 1910, and meanwhile all respectable women already practising, if enrolled before April of the present year, would be entitled to call themselves midwives, though others might act as such if they did not assume the name. The central administrative body was the Central Midwives Board, consisting of five physicians, three ladies, and one layman; the local supervision was vested in the county or county borough councils which were empowered to delegate it to committees to which other persons and ladies might be coöpted, or, a course which he held to be open to grave objections, to the district councils. They were advised by the Central Board to appoint the county medical officer or where there was none some other selected practitioner, with or without assistance, as chief executive officer with disciplinary power. In his own county the committee comprised nine councillors and five coöpted ladies, while he had secured the assistance of a lady M.B., B.S. Lond., D.P.H. Cantab., the wife of a medical man. The need for some legislation was obvious when they considered that fully 60 per cent. of births were attended by midwives who were responsible for the majority of the 2000 deaths from puerperal fever yearly. As to the intelligence and character of these women, 11,475 of whom had been enrolled up to Dec. 31st, 1904, he might say that of 581 in his own county, every one of whom had been visited by him or his assistant, only 22, or 4 per cent., had a certificate of any kind. 11 per cent. were absolutely illiterate, 17 per cent. were over 65 years of age, 8 per cent. were very dirty, 16 per cent. had no washable dresses, 10 per cent. lived in filthy houses, and 5 per cent. were suspected of drink—that is, allowing for a plurality of faults, at least 50 per cent. were, properly speaking, unfit from causes other than professional ignorance. The Central Board had issued a number of rules and recommendations, excellent in themselves but some of them useless or dangerous in view of the class of women enrolled. Rule 1, Section E, required the midwife to be scrupulously clean in every way and to wear a clean washable apron over a washable dress, and not to go from a case with foul-smelling discharges to another without changing her dress and thoroughly cleansing and disinfecting her hands, arms, and instruments. He had known a very dirty midwife doing a large practice with suppurating ulcers on her legs which she dressed with a single layer of rag. Indeed,

the simple and obvious duties here enjoined had deterred not a few from enrolling. Rule 2, Section E, specified the instruments the midwife should carry, viz., scissors, nailbrush, clinical thermometer, enema, catheter, and vaginal syringe, together with some simple disinfectant. But of what use was a thermometer to one who could not read, or, indeed, to many who could; very few of such women could be safely entrusted with a catheter; and as to vaginal douches, which were disapproved by the best authorities in normal cases, they were already in the hands of the dirty and ignorant a frequent cause of puerperal fever. A leathern bag into which the instruments would often be put without previous cleansing would be highly infective and he recommended Dr. Barwise's suggestion of a white linen bag with pockets, and, if desired, a waterproof cover, as very cheap and easily washed. Next in importance to the precautions for the prevention of puerperal fever, in respect of which the majority of midwives were scandalously negligent, were the steps to be taken in the event of its occurrence. Apart from its notification to the sanitary or district authority, through which the local medical officer of health became cognisant, the midwife was required by Rule 18, Section 3, to notify the case within 12 hours to the local supervising authority, usually the county council. Mr. Fosbroke had recently heard, through the local medical officers, of ten cases occurring in the practice of midwives, not one of which had been reported by them, though four ended fatally. The absence of any provision in the Midwives Act for the payment of medical men called in was a grave omission which might be met by a one-clause Amendment Act, for the county councils had no legal power to pay, while the guardians and sanitary authorities had no *locus standi*. The registration of stillbirths called for strict investigation. The disinfection of clothing and bedding, save by boiling, was in a very unsatisfactory state; a small minority only of the sanitary authorities possessed proper steam disinfectors, the "stoving" sufficient for killing vermin being quite inadequate. The means for inquiring into the character of midwives as regards insobriety, ignorance, negligence, or malpraxis were unsatisfactory and there were other defects and omissions in the Act which called for consideration.—Dr. C. J. Cullingworth, speaking for the Central Board, said that the rules would be revised after three years' experience of its working but since there were 22,000 midwives already enrolled there was no fear of a dearth until the supply of qualified women was adequate. The provision *re* stillbirths was intended to force the hands of the legislature in the interest of vital statistics.—Dr. J. W. Hembrough of Northumberland said that his council had received only 85 applicants, of whom 50 had been enrolled, but 35 were more or less illiterate. They did not insist on the instruments which few were competent to use. They paid medical men for notifying puerperal fever but not for medical assistance. His council was training six midwives each year.—Dr. J. R. Kaye said that in the West Riding they had enrolled 934 women, of whom 37 per cent. were absolutely illiterate and very few had washable dresses. Besides these 135 continued to practise largely under cover of medical men and many refused to be enrolled or gave up practising rather than comply with the rules. Numbers of those who had registered did not know what a thermometer was or how to use a catheter, and their syringes, &c., were put away dirty and blood-stained. The only disinfection on which he relied was by boiling for 35 minutes.—Mr. C. E. Paget said that in Northamptonshire 400 applicants had been reduced to 100 by retirements brought about by the visits and representations of an inspector, a L.O.S., who gave instruction to the rest.—Mr. J. Tubb Thomas said that in Wiltshire of 500 midwives in practice before the Act only 100 could enrol; the majority being illiterate he had had their thermometers marked with a red line at 100·4°.—After Dr. J. S. Tew, Dr. E. C. Seaton, and others, as well as some ladies had spoken, the secretary of the Central Midwives Board stated that the rules would be revised thoroughly next year. He deprecated delegation which was resorted to where there was no county medical officer of health, an omission in which Kent, wealthy though it was, set a bad example. According to the census there were 30,055 midwives, of whom 22,000 had enrolled, though many of these seemed to desire the certificate as an ornament only and some claimed to have been in practice for 60 years. The absence of any provision for payment of medical men was a defect on which they had asked the Privy Council and the Local Government Board to legislate. The midwife's certificate ought to be equivalent to the order of the relieving officer. A definition of an "offence" for which a midwife might be removed was wanted; one woman was convicted of keeping a lodging-house for which a licence had been refused because she kept a brothel also, and another who had a milk-shop had been fined for adulteration. But these defects were due to its having been a private Member's Bill rushed through in two and a half hours on a Wednesday afternoon.

BRITISH GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on April 13th, Dr. William Alexander, the President, being in the chair.—Professor C. Jacobs (Brussels) read a paper on Surgical Intervention in Cancer of the Uterus, with actual results. Surgical treatment of uterine cancer must have two essential objects: total ablation of the infected organs and removal of the neighbouring lymphatic territory. Surgeons were not unanimous as to the best form of treatment. Intervention must take place as widely as possible from the seat of the infection and the sooner done the less the chance of extension. The only chance of cure was early diagnosis and prompt intervention. In 13 cases of supravaginal amputation 12 showed recurrence within one year and one 15 months later. Vaginal hysterectomy was systematically performed in 81 cases with an immediate mortality of 1·2 per cent., while in four years not one patient was alive. Abdominal hysterectomy was performed in 95 cases, with an immediate mortality of 6·3 per cent., and recurrence took place within six years in the remainder. In both varieties of cancer of the cervix infection took place through the lymphatics, consequently all glands of parametrium and cellular tissue must be removed. Glands were invaded beyond the limits visible to the naked eye. The invasion of tissues and glands was demonstrated far from the primary growth. Cancer did not recur but continued and would not reappear if completely removed. Actual results appeared to prove either that cure was usually impossible or that operations were imperfect. Cancer of the cervix being primarily a local infection propagated by lymphatics induced Professor Jacobs to advocate abdominal hysterectomy. Reports on five inoperable cases were given which improved sufficiently to permit of intervention after injections of Doyen's anti-neoplasic serum.—Professor J. W. Taylor considered it had been well shown that cancerous deposit was found at a considerable distance from the point of invasion. He was interested in the reference to the serum treatment and agreed with Professor Jacobs that it was not possible to judge of results at present.—Mr. F. Bowreman Jessett gave a series of 180 cases removed by the vaginal method with the exception of two or three by combined operation. He preferred the vaginal operation. If the sacral or lumbar glands were involved it made little difference which method was adopted.—Miss L. Garrett Anderson was interested to know that Professor Jacobs approved of the abdominal rather than the vaginal route.—Dr. George Elder considered that the low rate of mortality must be attributed to the operative dexterity of Professor Jacobs.—Dr. Thomas Wilson considered that the results of extensive abdominal operations were certainly no better than those by the vaginal method.—Dr. F. J. McCann opposed the extensive operations now practised in carcinoma of the uterus owing to anatomical difficulties of removal. The supravaginal method had still a place in treatment. In the vaginal operation he removed considerable portions of the anterior and posterior walls of the vagina with the cervix.—Dr. T. A. Helme considered such personal experience from such an authority of greater value than statistics. The more extensive the operation the better chance the patient had from recurrence for a considerable time.—Dr. A. E. Giles believed from a theoretical view that the abdominal route was to be preferred but while operative results remained as at present many would choose the vaginal method.—Mr. Christopher Martin wished for fuller details as to Professor Jacobs's method of performing abdominal hysterectomy.—Miss L. B. Aldrich-Blake had practised the abdominal method for the last four years in cancer of the cervix. She had 15 cases with no operative mortality but most were too recent to give the final results. The subsequent progress was satisfactory.—Dr. Macnaughton-Jones thought that Professor Jacobs had shown the certainty of lymphatic invasion, the difficulty of reaching the limits of that infection, and that a period of five or six years must elapse before any case could be considered cured. He had to make 700 sections of a lymph gland before finding evidence of carcinoma in one of his cases.—Professor Jacobs, in reply, said his paper was limited to cancer of the

cervix and his results after vaginal hysterectomy were discouraging. The results of abdominal hysterectomy with clearing out of pelvic tissue were unsatisfactory but by improving his method he hoped for still lower mortality results. Finally, he urged the abandonment of vaginal in favour of abdominal hysterectomy in cancer of the cervix.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—A meeting of this society was held at 20, Hanover-square, London, W., on April 19th, Mr. William Bowen Davies (Llandrindod Wells), the President, being in the chair.—Dr. Henry McClure read a paper on the Climatology of the Sahara. He spoke of the several characteristics of the desert; of his experiences of the great desert regions of North America lying between the Rocky Mountains of Colorado as well as of the Sierra Nevada of California; and of the points that differentiated the climate of the desert from that of other regions. Climatic features in the Sahara were the absence of clouds, the peculiar properties of the desert air, the wide range of temperature, and the absence of moisture which enabled people to endure such extremes without discomfort. Biskra with the Sahara country about it and the mirage were described. The climate indications in diseases of faulty metabolism or those due to toxins and neuritis were touched upon. The striking psychical influence of the desert environment was strongly emphasised.—Dr. E. Symes-Thompson compared, from personal observation, the climate of Biskra with that of Helouan and Assouan. He said that desert air, by promoting evaporation, metabolism, and elimination, was of proved value in many rheumatic and gouty affections, and especially in syphilis and in renal disease. The desert between Khartoum and Fashoda was becoming more and more accessible as a health resort.—Dr. C. Theodore Williams said that the climate of the desert was characterised by great insolation, extremes of temperature, marked radiation, and wonderful dryness, and the result was a most exhilarating influence on the nervous system and marked stimulation of the processes of secretion and metabolism. He recommended the desert climate for patients suffering from chronic rheumatism, chronic bronchitis, asthma, and limited tuberculous cavity in the lungs. He wished the climate of the Egyptian desert could be rendered available for patients of moderate means.—Mr. W. Armstrong (Buxton) said that while practising in Egypt during the past winter he had observed patients at Mena, on the edge of the desert, at Helouan, in the desert, and also in desert camps. Cases of rheumatism, rheumatoid arthritis, neuritis, and atonic gout were greatly benefited. He considered that there was a great future before treatment in small camps. At present the expense and the loneliness were objections but by next winter arrangements would be made for combined camps, by means of which expense would be much reduced and some companionship assured.—Dr. J. T. Leon (Southsea) stated that he had quite recently been in Biskra and had experienced the exhilarating effect of the desert air. The water was extremely hard, in fact, brackish, owing to the large amount of sodium chloride and lime salts. This, combined with the keen air, played havoc with ladies' complexions and made toilet operations unpleasant. The life was distinctly monotonous and after a time rather depressing.—Dr. Leonard Ll. B. Williams, Dr. Harry Campbell, Dr. R. W. Felkin, and Dr. P. G. Lewis (Folkestone) also took part in the discussion.

DEVON AND EXETER MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on April 13th, Mr. W. Horton Date, Vice-President, being in the chair.—Mr. G. L. Thornton read a paper on Modern Therapeutics. He began by calling attention to the modern tendency to the unnecessary prescription of the compressed drug which had the disadvantage of encouraging self-medication by laymen. He then passed in review various lines of treatment, firstly, remedies which we owe to bacteriology. The great reduction in the diphtheria mortality due to antitoxin was emphasised. He commented on the larger dosage of the antitoxin in vogue now in comparison with the number of units employed some five years ago and, drawing from his own statistics, questioned if this larger dosage was always necessary. In tetanus it was a question whether recoveries were *post hoc* or *propter hoc* with respect to serum treatment. He mentioned the striking results from the use of Sclavo's serum in anthrax but was sceptical of the value of antistreptococcic serum, which needed further elaboration. The open-air treatment at present held out the best hope of cure in pulmonary tuberculosis, although in the future an antitoxin would probably be found, when a combination of these methods was not unlikely. He touched on protection from typhoid fever and referred to the valuable lecture by Dr. F. F. Calger[1] on treatment in this disease. He drew attention to the dangers of tar derivatives in influenza and advocated a more general employment of quinine. He recommended that measles should be made generally notifiable. In whooping-cough he mentioned the good results which he had obtained with quinine. He discussed the displacement of sodium salicylate by aspirin in acute rheumatism and considered that failure with sodium salicylate was often due to the employment of an impure preparation. In spasmodic asthma patients sometimes triumphantly referred a cure to the use of a proprietary remedy administered in an atomiser and he commented on the position of medical men in the matter from the point of view both of humanity and professional ethics. In the treatment of broken-down compensation in heart disease Dr. A. Morison had compared the physician to the surgeon in the presence of a grave catastrophe and had advocated the administration of digitalis in maximal pharmacopœial doses—and even higher if necessary—at frequent intervals. Mr. Thornton criticised the modern tendency to run riot in organotherapy and mentioned as the latest example the employment of extract of raw kidney in Bright's disease; in the latter disease he testified to the value of small doses of morphine for uræmic symptoms. In diabetes the dietetic treatment was less rigid and he mentioned the value of potatoes as a means of supplying carbohydrates. The yelk of egg had been found useful as a vehicle for fat easy of assimilation.—In the discussion which followed Mr. Date, Dr. J. A. W. Pereira, Dr. R. V. Solly, and Dr. C. J. Vlieland took part and Mr. Thornton replied.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on April 14th.—The following cases, pathological specimens, &c., were shown:—Mr. J. F. Dobson: A case of Bilateral Congenital Dislocation of the Hip in a patient 10 years old.—Dr. J. C. Teasdale: Anencephalic Fœtus with Extroversion of Abdominal Viscera.—Dr. T. Churton: Bilateral Empyema in a child, aged two years; one side was incised and the other was aspirated.—Mr. H. Littlewood: (*a*) A case of Proctectomy; (*b*) Ectopic Gestation; (*c*) Parovarian Cyst with a Twisted Pedicle; (*d*) Calculus in the Vermiform Appendix; and (*e*) Osteoma of the Upper Jaw.—Dr. T. Wardrop Griffith: (*a*) Imperforate Anus with Atresia of Duodenum and other malformations; and (*b*) (with Mr. Nixon) Complete Pulmonary Atresia in a man, aged 35 years.—Dr. W. H. Maxwell Telling: (*a*) Aortic Stenosis in a boy, aged 17 years; (*b*) Aortic Stenosis in a girl, aged 13 years; (*c*) Chronic Urticaria with Pigmentation in a child; (*d*) Tuberculoma of the Optic Thalamus and Corpora Quadrigemina from a child aged five years; and (*e*) Deformed Liver showing Constrictive Lobes.—Dr. J. B. Hellier: (*a*) Tuberculous Salpingitis; (*b*) Mycoma Uteri; and (*c*) Fibro-cystic Myoma.—Dr. E. F. Trevelyan: (*a*) A case of Tabo-paralysis; (*b*) an early case of General Paralysis; (*c*) a specimen of Multiple Tuberculous Masses in the Brain; and (*d*) a specimen of Secondary Carcinoma in the Pons.—Mr. E. Ward: Hypernephroma (suprarenal rest tumour of the kidney).—Mr. A. L. Whitehead: Parts removed from a case of Submucous Resection of the Nasal Septum for Complete Obstruction of the Nostril. The patient was also shown.

[1] THE LANCET, Nov. 26th, 1904, p. 1467.

ROYAL DEVON AND EXETER HOSPITAL.—A few months ago Mrs. Nosworthy of Dawlish gave the sum of £1000 for the purpose of erecting a new operating theatre for the Royal Devon and Exeter Hospital. It has since then been discovered that the cost of the undertaking will be £1500 and when Mrs. Nosworthy was acquainted with the fact she generously decided to give an additional £500 to complete the work.

PHYSICAL AND MENTAL DEGENERATION.—There will be a meeting in the Leicester council chamber on Thursday next, May 11th, at 3.30 P.M., when a lecture will be delivered by Dr. Robert Reid Rentoul on Degeneracy, its Causes and Prevention, with special reference to the proposed sterilisation of certain degenerates. A short discussion will follow and invitations to attend are being issued by Mr. G. Clifton, 60, London-road, the chairman of the borough asylum committee and president of the Leicester Medical Union.

Reviews and Notices of Books.

A Treatise on Plague, dealing with the Historical, Epidemiological, Clinical, Therapeutic, and Preventive Aspects of the Disease. By W. J. R. SIMPSON, M.D. Aberd., F.R.C.P. Lond., D.P.H. Cantab.; Professor of Hygiene, King's College, London; Lecturer on Tropical Hygiene, London School of Tropical Medicine; formerly Health Officer, Calcutta, &c. Illustrated by Maps, Diagrams, Charts, and reproductions of Photographs. Cambridge: The University Press. 1905. Pp. 486. Price 16*s.* net.

Professor Simpson by his wide experience of plague in many countries and in all its bearings and by his personal and scientific attainments is eminently fitted to deal with a subject which he has made peculiarly his own; and he has evidently spared no pains to render his work authoritative, comprehensive, and practical. Naturally the greatest amount of interest is centred in India, for plague has in India attained so firm a hold that we doubt whether any records of ancient or mediæval times surpass the enormity of the scourge now prevailing in that country.

The subject of plague is divided into four principal parts. The three chapters of Part I. are devoted to the History and Distribution of Plague. Chapter I. deals with Plague from the Early Centuries to the Nineteenth Century. Under this heading is given a succinct and interesting account of plague from Biblical to modern times. Commencing with the first well-authenticated pandemic which originated at Pelusium in Egypt in 542 B.C. and its subsequent extension to Constantinople described by Procopius of Cæsarea, we are afforded a historical picture of the way in which plague maintained its prevalence throughout the sixth, seventh, eighth, eleventh, fourteenth, fifteenth, sixteenth, seventeenth, and nineteenth centuries down to the present day.

Chapter II. deals with Plague in India and Chapter III. with the Present Pandemic. The information afforded in the historical part of the work is comprehensive, lucid, and accurate. In the statistical details of the plague in London evidence is again brought home to us of the persistency of plague when once it has attained a serious hold upon a locality or city. For no less than 136 years—from 1543 to 1680 A.D.—did plague continue to threaten London, appearing during no fewer than 84 years of that period; and from 1605 to 1680, with the exception of four years, deaths from the disease were recorded. The inference to be drawn from the experience of London does not afford a hopeful prospect that the disease will be quickly eradicated from India as many anticipated when plague first appeared in Bombay in 1896. This part of the treatise is abundantly illustrated by clear and useful maps indicating the course and the prevalence of plague throughout the world.

Part II. is concerned with the Epidemiology of Plague. The earlier views of the theory of contagion, the culture, the characteristics, the vitality, and the varying virulence of the bacillus, are amply considered in Chapter IV., under the title of the "Nature of Infection." One of the most interesting chapters is that devoted to the Relationship of Epizootics to Plague. It is curious to note how in even ancient times this relationship was observed and how disease and death in rats and mice have been always associated with plague in man. Attention is also drawn to the results of Dr. William Hunter's observations in Hong-Kong showing "that the plague in rats continues to exist at a low level throughout the non-epidemic period of plague" and that "the epizootic rises at the season when young rats are most numerous." Inquiries made among European medical men in South China by the author afforded practically unanimous evidence that the rat mortality is a precursor of plague. A careful analysis of the experiments made by the German and Austrian commission, by Professor Simpson and Dr. Hunter in Hong-Kong, by Mr. Ernest Hill in Natal, and by other observers tends to show an intimate relationship between plague-infected animals and the disease in man; and the chronicity of the infection of some animals is important evidence as to how a prolonged continuation of plague may prevail in endemic centres.

In Chapter VI. we are made acquainted with the "different views as regards the etiology of pandemics and epidemics of plague." Under this heading perhaps the most interesting facts will be found to be the abnormality of seasons and the exceptional meteorological conditions which have been noticed to precede epidemics of plague in many localities. That these stand to each other as cause and effect may be questioned, for such varying influences as war, famine, wet seasons, drought, volcanic eruptions, unhygienic surroundings, and political, social, or economical conditions the reverse of prosperous have all found supporters as etiological factors in bringing about an outbreak of the disease. Epidemics of plague and seasonal influences afford a wide and useful field of study. The most recent observations on this point are those of Gotschlich, quoted by the author, who attempts to explain the regularity of the seasonal periodicity of plague in an infected locality by the seasonal breeding period of the rat and states "that in the plague-free months many of the older rats suffered from a latent or chronic form of plague, while when the younger rats came into existence these young rats were susceptible to the acute disease." In Chapters VII. to XI. inclusive the subjects treated are the Variation in Powers of Diffusion of Epidemics, the Variation in Virulence of Plague Epidemics, the Fostering Conditions of Endemicity and Epidemicity, and the Diffusion and Modes of Dissemination of Plague.

Part III. deals with Plague in the Individual and in Chapters XII. to XVI. an excellent *résumé* of the morbid anatomy and the pathology, the clinical features (with reproductions of photographs of patients with buboes), the diagnosis, the prognosis, and the treatment of the disease are concisely and clearly given.

Part IV. of the treatise is devoted to Measures for Prevention and Suppression of Plague. This important subject is divided into five chapters and extends to no less than 80 pages. The prophylactic measures employed before and after the discovery of the bacillus pestis are admirably enunciated and in no part of his work has the author shown more forcibly his qualifications for undertaking a book on plague. We are especially interested in his recommendations as to the main lines along which inquiry in regard to plague is needed. The more urgent questions to be answered by future investigators are some 17 in number, of which the chief are: 1. The length of time during which an infected patient or infected animal retains infection. 2. Whether rats or human beings are the chief disseminators of plague and in what proportion. 3. Whether other animals are disseminators of plague without being affected themselves and in what way. 4. Whether insects, such as fleas, bugs, flies, and so on, disseminate plague. 5. What are the species of fleas on the rats, fowls, cats, and dogs in the locality investigated and which of them attack man? 6. Whether there are other modes of dissemination besides animals and insects. 7. How is the infection conveyed from man to man and from animal to animal? 8. Does season affect the bacillus or its carriers? 9. What is the reason of dormancy in non-epidemic seasons and what are the agents at work producing recrudescence? 10. What are the best agents for destroying the bacillus or its carriers?

These are but examples of some of the problems concerning plague that await to be elucidated before the disease

can be dealt with scientifically. In regard to several of these questions no one has helped us more efficiently than the author himself. Whilst working in Hong-Kong in conjunction with Dr. Hunter, he advanced our knowledge in regard to the epidemiology of plague to a marked extent and opened up fresh fields of inquiry.

As given in Appendix I. the reported deaths from plague in India in 1904, amounting to no less than 1,040,429, justify the urgent appeals "to save India" made by the author. The picture presented to us of the state of India during recent years is drawn with a reservation that does the writer credit, but when his words are weighed their full meaning conveys a terrible interpretation. The severity of the plague epidemic in India during 1904 seems likely to be surpassed during 1905, for so far the returns are in excess of any previous year. But little information of the state of plague in India is published, yet in many parts of that country a scourge as severe and as deadly as was the "Black Death" in Europe is prevailing. The Government of India has practically given up attempting to check or to limit the epidemic, and the rest of the world has to stand aside and to let plague have its way. India is insufficiently supplied with medical officers; executive and departmental committees have proved useless; and it is to be hoped that for the sake of India and the honour of this country an organised public health service commensurate with the needs of India will be created, and at once. Appendix II. gives in full the "provisions to be observed by the countries signing the Convention on the appearance of plague or cholera in their territory." These provisions are known as the Paris Convention of 1903.

We congratulate Professor Simpson upon the completeness of his work. He has given to the practical physician an accurate guide to the diagnosis and the treatment of plague; the bacteriologist will find here a trustworthy account of the plague bacillus, its nature, its virulence, and its vitality; the sanitarian will read of the way in which to deal practically with an epidemic; and the politician, if he will but realise the condition of India as recorded in these pages, will be enabled to form some idea of the pressing calamity which threatens to assume aspects and proportions that may in the near future require most strenuous endeavours to allay.

The letterpress of the book is highly creditable to the publishers; the charts, diagrams, maps, and reproductions of photographs are abundant, educative, and distinct; and in every way the work is worthy of the important subject with which it deals.

Diseases of the Nose, Throat, and Ear, and their Accessory Cavities. By SETH SCOTT BISHOP, M.D., D.C.L., LL.D., Author of "The Ear and its Diseases"; Honorary President of the Faculty and Professor of Diseases of the Nose, Throat, and Ear in the Illinois Medical College; Professor to the Chicago Post-Graduate Medical School and Hospital; Surgeon to the Post-Graduate Hospital and to the Illinois Hospital; Consulting Surgeon to the Mary Thompson Hospital, to the Illinois Masonic Orphans' Home, and to the Silver Cross Hospital of Joliet, &c. Third edition. Thoroughly revised, rearranged, and enlarged. Illustrated with 94 coloured lithographs and 230 additional illustrations. Philadelphia: F. A. Davis Company. Royal 8vo, pp. 564. Price, extra cloth, $4.00 net; sheep or half Russia, $5.00 net.

Dr. Bishop's work has passed through two editions since the commencement of 1897, the second edition having been reprinted several times. It is therefore evident that the book is much appreciated in America. The present edition contains considerably more information on diseases of the upper air passages than the earlier ones did. The whole book is profusely illustrated, especially with figures of instruments and black-and-white reproductions of sketches and photographs, many of those appearing in this edition being original.

The first 115 pages deal with Diseases of the Nose, no less than 28 pages being devoted to the consideration of hay fever. Dr. Bishop considers that the paroxysms are dependent upon the existence of three factors—abnormally susceptible nerve centres, hyperæsthesia of the peripheral termini of the sensory nerves, and the presence of one of a large variety of irritating agents. The absence of any one of these is sufficient, in his opinion, to prevent the occurrence of an attack, but there can be no doubt that Dr. Bishop considers uric acid as being, if not invariably, at least an extremely frequent example of the irritating agents. He says that there is a remedy which has always in his experience been effective in giving relief: this is a combination of atropine and morphine in the proportion of 1 of atropine to 50 of morphine. According to Dr. Bishop "morphia clears the blood of uric acid, diminishes the nervous irritability, suppresses over-secretion of the muciparous glands, and stimulates the circulation and activity of the nerve centres, whilst the atropine elevates the tone of the blood-vessels, quickens the pulse, decreases all the secretions except the urine, sustains bodily temperature, stimulates the respiratory centres, counteracts the constipating effect of the morphia, and acts as an anti-spasmodic."

In dealing with Diseases of the Accessory Cavities of the Nose Dr. Bishop is brief, ten pages, which include two full-leaf illustrations and six other woodcuts, being all that he considers necessary for this wide and difficult part of the subject. As an example of the amount of information given we may quote the treatment for disease of the sphenoidal sinus, in which he says that "the methods already described for diseases of the accessory cavity are applicable here." Then he mentions how the cavity may be opened and says that subsequent treatment has been indicated in dealing with the other sinuses. It would certainly be better for the completeness of this work if more attention were paid to diseases of the accessory sinuses—not infrequent and most troublesome complaints. Diseases of the Pharynx occupy the next 130 pages, of which 30 are devoted to a study of diphtheria, which is very fully discussed, especially with regard to the serum treatment. Diseases of the Larynx occupy 80 pages, and the remainder of the work is devoted to Diseases of the Ear. Dr. Bishop devotes 30 pages to the General Therapeutics of the Ear and case taking, and a very free description of that method of treatment, apparently largely used in the United States—viz., compressed air apparatus. Most of the illustrations in this part are taken from Politzer's work. In discussing adhesive inflammation of the middle ear the author confuses the various conditions known as sclerosis. We note that Dr. Bishop considers that paracusis Willisii, or the better hearing in a noise, is pathognomonic of sclerosis, although this is a condition which cannot possibly occur in any variety of so-called sclerosis in which the stapes is fixed by bony ankylosis. Intracranial complications of suppurative ear disease are cursorily dismissed in six pages.

The coloured illustrations in this volume are entirely different from those which appeared in the first edition, which were taken from Sajous's well-known work, but include a plate illustrating diseases of the ear, produced by permission from one of Politzer's works. Dr. Bishop has produced a far superior work to that which he originally presented to the profession and we think that in several ways it carries out the purpose for which it was designed—namely, of "assisting students in working for their degrees, for those practitioners who wish to acquire more knowledge of the specialities it deals with, and for those who are gradually exchanging family for special practice," for Dr. Bishop is very definite in his statements and much space is devoted

to symptoms, diagnosis, and treatment. He has entirely excluded anatomy and deals with pathology but casually.

Fetichism in West Africa. By the Rev. ROBERT HAMILL NASSAU, M.D. London: Duckworth and Co. 1904. Pp. xii.-389. Price 7*s.* 6*d.* net.

Dr. Nassau is a missionary attached to the American Presbyterian Mission and spent 40 years in French Congo, so that he possessed unusual opportunities for the collection of the extremely interesting mass of information which we find in the book before us. Of late years fetichism, charms, games, stories, and the thousand and one matters which go to make up what is comprehensively termed folk-lore have assumed great importance as the unwritten books in which are contained the history of the human race. No longer are Stonehenge or the lines at Carnac attributed to the Devil, nor are all folk tales, from that of the "Two Brothers" down to "The Three Bears," considered as solar myths.

It must be remembered that to the savage what civilised people call a natural death is unknown. If a man is shot or stabbed, or brained with a club, or drowned, or eaten by a crocodile or a leopard there is an obvious cause of death. In disease the cause is not so obvious and death from disease is naturally put down to witchcraft. Post-mortem examinations are sometimes made with the object of ascertaining the path of the evil spirit which has been sent into the deceased by the power of a fetich or which, in the case of a magician, has destroyed him owing to the "familiar" having become too powerful for his master. Dr. Nassau cites the case of a woman in whom the fimbriated extremities of the Fallopian tubes were declared to be "witch" on account of the ciliary movements which were observed on dissection. Said the native "doctor," "See! those are the spirit teeth. Don't you see how they move and extend in desire to catch and eat?" Dr. Nassau naturally asks the question whether the old name of "morsus diaboli" for the fimbriated extremity had anything to do with this idea. Another superstition is that a foreigner—i.e., a man from another district—should not die in the district to which he is a visitor and dying men are often hurried back to their own district in order that the men of the district where the invalid is a visitor should not have to pay the man's own country a fine for their demons having killed a stranger. Occasionally something like this has occurred in more civilised lands in the case of sick paupers belonging to another parish to that in which they became ill.

We commend Dr. Nassau's book to all who take any interest in folk-lore and its many ramifications.

LIBRARY TABLE.

The Naked-eye Anatomy of the Human Teeth. By THOMAS E. CONSTANT, L.R.C.P. Lond., M.R.C.S., L.D.S. Eng. Illustrated. Bristol: John Wright and Co. London: Simpkin, Marshall, Hamilton, Kent and Co. 1905. Pp. 194. Price 7*s.* 6*d.* net.—This small volume is a welcome addition to the literature of the teeth and should prove of use to both student and practitioner. The book, however, contains rather more information than the title might lead the reader to think and we find in addition a most excellent description of the individual teeth, as also a chapter devoted to the anatomy of the mouth and the associated parts, the bony framework of the jaw, and so on. In the final chapter there is a good account of the jaws and the teeth at various periods of life, illustrated by several excellent half-tone blocks. Useful as this book is it might be rendered more so by a description of the common variations in the shape of teeth met with in everyday practice and by the addition of reproductions of photographs of teeth to be studied side by side with the plain line diagrams which the author has adopted.

The Surgical Diseases of the Genito-Urinary Tract, Venereal and Sexual Diseases: A Text-book for Students and Practitioners. By G. FRANK LYDSTON, M.D., Professor of the Surgical Diseases of the Genito-Urinary Organs, University of Illinois. Revised edition. Illustrated with 233 engravings and 7 coloured plates. Philadelphia: F. A. Davis Co. 1904. Pp. 1008. Price, extra cloth, $5; half Russia, $6 net.—This book has been exhaustively revised since the first edition appeared. Alterations of importance have been made. In the treatment of gonorrhœa especially the wide adoption of the organic salts of silver as the most trustworthy remedies for that disease has required modifications of the chapter dealing with its treatment. The author's experience teaches him that argyrol in a strength of from 5 to 20 per cent. is the best injection in the early stages of gonorrhœa. A number of coloured plates have been added and better black-and-white illustrations have been substituted for some of those in the earlier edition. An effort has been made to introduce only such pictures as have a distinct teaching value. The book is written in a straightforward and explicit manner and all through it gives the reader the impression that he is being taken into the confidence of the writer and is being told all that the author really believes and knows to be the best way of treating the various morbid conditions.

An Elementary Treatise on the Light Treatment for Nurses. By J. H. SEQUEIRA, M.D. Lond., &c., Physician in Charge of the Skin Department and Lecturer on Dermatology at the London Hospital. London: The Scientific Press, Limited. 1905. Crown 8vo, pp. 83. Price 2*s.* 6*d.* net.—The universal acceptance of the value of light as a curative agent has led to the provision of special departments for photo-therapy in most hospitals of any size and there must now be a large proportion of those engaged in nursing to whom the details of this form of treatment are of serious interest. In this small book they will find the subject treated in a way that is eminently suited to their requirements. The physical properties of light, its influence on living organisms, and the principles included in its application to the treatment of disease are set forth clearly and concisely. The apparatus employed is next described in detail with special reference to those parts which are to be looked after and used by the nurse. The chapter on technique has been compiled with great care and attention to detail, the strict observance of which the author considers to be essential to successful treatment. The book is well got up, the illustrations are good, and its low price places it within reach of all.

The Life and Times of St. Boniface. By JAMES M. WILLIAMSON, M.D. London: Henry Frowde. Ventnor: W. J. Knight. 1904. Pp. 137. Price 5*s.* net.—Although June 5th, the day of his martyrdom, is allotted to the memory of St. Boniface in the Calendar of the English Church we doubt whether 1 per cent. of Englishmen know anything about him who was almost the first English missionary of whom anything certain is known. Boniface, whose name was originally Winifrith, was born in 680 at Crediton and was brought up in the Benedictine Abbey of Nutscelle, which may or may not have been on the site of what in after years was Netley Abbey. At the age of 30 he took holy orders and conceived a desire to go as a missionary to the Frisians. In 719 he obtained the leave of the Pope to carry out this wish and in 723 was consecrated a bishop under the name of Boniface. Further details will be found in Dr. Williamson's interesting pages of how Boniface became the apostle of Germany, how with the aid of Sturmi he founded the great Abbey of Fulda, and how on June 5th, 755, he met a martyr's death at the hands of the pagan Frisians. A fuller account of the founding of Fulda may be read in Charles Kingsley's

"The Roman and the Teuton." All who are interested in he early history of our island should read Dr. Williamson's book, for it tells the story of one who went out with his life n his hand to conquer with no earthly sword and whose example no doubt inspired Livingstone, Patteson, and many others who have spent their lives in the service of their ellows.

Preaching and Healing, 1904. London: The Church Missionary House.—Under the above title the Medical Auxiliary of the Church Missionary Society publishes its annual report. It contains much information regarding medical missions in the East and the two maps which accompany the report, one showing the Mahomedan lands of the East and India and the other China and Japan, enable the reader to realise clearly the great extent of the operations of the auxiliary. The reports of the medical officers n charge of the various stations show that continuous progress is being made but it must not be forgotten that the work of the auxiliary entails a great strain upon its financial resources. Lack of monetary aid is not, however, the only difficulty with which the medical missionary has to contend. Mr. Leonard G. Hill, writing from Pakhoi, describes the case of a pirate who, after being treated for a bullet wound of the leg, stole money from his fellow patients and as soon as he could use his leg again left the hospital with a blanket. On the other hand, it is not an uncommon thing to meet with cases of genuine gratitude on the part of the patients. Pakhoi seems to be a very interesting station to the medical man. The officer in charge of this station reports: "We get an immense variety of diseases ..... but never enteric fever, scarlet fever, nor diphtheria. On the other hand, we get every skin disease there is and every eye disease known from a professional point of view, many affording the greatest clinical interest. Our clinic would be the envy of many a professional man in Europe, and indeed it would make a splendid training-ground for a medical career." Many other paragraphs might be quoted if space permitted, for the whole report is full of graphically written details showing the work that is done, and still remains to be done, in the mission field, he life which the self-sacrificing missionaries lead, the need for more labourers, and the help which those at home can render by more liberal financial assistance.

German Technical Words and Phrases: an English-German and German-English Dictionary. By C. A. THIMM, F.R.G.S., and W. VON KNOBLAUCH. London: E. Marlborough and Co. 1904. Pp. 218. Price 2*s.* 6*d.*; leather, gilt edges, 3*s.* 6*d.*—This is a companion to the little book of "French Technical Words and Phrases" which we believe appeared about five years ago. It is of a handy size for the pocket and contains a lot of useful information. Roman type, which is much preferred by many persons studying German, has been employed in place of he German characters throughout the volume. This little book is well worth possessing by those whose work brings them into frequent contact with German technical words in common use. The publishers now have the Italian volume in hand.

JOURNALS AND MAGAZINES.

The Practitioner.—The number of this periodical for April is distinguished by the variety of subjects considered in the articles that compose this issue of the journal. Dr. G. Newton Pitt, in an article upon Some Obscure Cases of Cancer of the Stomach, draws attention again to the diagnostic importance which he attaches to enlargement of the glands behind the eft sterno-mastoid muscle. The most important gland, he states, and often the only one to be involved, lies behind the two lower roots of the sterno-mastoid. In order to feel it it is often necessary to make the patient cough. This may be the only external gland affected by cancer within the abdominal cavity. Specific remedies for tuberculosis, the treatment of ringworm, the pathology of puerperal eclampsia, and the cyto-diagnosis of pleural and cerebro-spinal fluids are amongst the other matters discussed in a very interesting number of the magazine.

New Inventions.

THE "REED HUMANISER."

THIS is an apparatus designed for modifying cows' milk so that the product shall conform as nearly as possible to the composition of human milk. The method is based on the principle that by allowing cows' milk to stand a portion of the skim milk may be run off by which the excess of proteid and salts is removed. Afterwards some milk sugar and a little water are added to the fatty portion. The apparatus employed for the purpose is simple enough and consists of a graduated jar provided with a draw-off stopcock and mounted on a stand. An ingenious balance accompanies the apparatus for measuring the requisite quantities of water and milk sugar but this has recently been superseded by the more convenient plan of tablets of milk sugar each containing a definite weight of sugar. The *modus operandi* is as follows. A convenient quantity of good fresh cow's milk is poured into the graduated glass vessel and allowed to stand until the cream has risen. The number of divisions of cream is noted. A definite proportion, according to the age of the infant or special requirements, of the separated milk is then drawn off. A definite quantity of water together with a specific number of sugar of milk tablets is then added to the remainder. The quantities required are indicated in the table provided with the apparatus. Proceeding in this way and following the directions given for a child aged six months we obtained from cow's milk a milk of the following composition: fat, 3·00 per cent.; milk sugar, 7·00 per cent.; proteid, 1·00 per cent.; and mineral salts, 0·37 per cent., which accords very well with the published analyses of human milk. The advantages of the method are simplicity, accuracy, and the use of a fresh and not a sterilised product. We have received also a statement as to the satisfactory results yielded by this method in actual practice. The apparatus is supplied by Messrs. Teed and Co. of 11, Grove-Hill-road, Camberwell, S.E.

INSTITUTE OF CHEMISTRY OF GREAT BRITAIN AND IRELAND.—The following is the pass list of the examinations held in April:—Of six candidates who entered for the intermediate examination three passed: J. D. Kettle, B.Sc. Lond., Elison A. Macadam, and R. Simmons. In the final examination for the Associateship (A.I.C.), of seven examined in the branch of mineral chemistry, three passed: J. Alexander, B. O'Shaughnessy, Assoc.R.C.Sc. Lond., and E. Rhodes, B.Sc. Vict.; of five in organic chemistry three passed: S. J. M. Auld, Ph.D. Würzburg, H. W. Goodwin, and R. Robison; and of eight who entered in the branch of the analysis of food and drugs and of water, including an examination in therapeutics, pharmacology, and microscopy the following six passed: J. H. Barnes, B.Sc. Birm., J. W. Brisbane, D. Gair, B.Sc. Lond., H. G. Harrison, B.A. Cantab., R. Park, and J. Race. One candidate passed an examination for the Fellowship (F.I.C.): A. E. Brown, B.Sc. Lond. The examiners in chemistry were Mr. W. W. Fisher, M.A. Oxon., F.I.C., and Dr. G. G. Henderson, M.A., F.I.C. The examination in therapeutics, pharmacology, and microscopy was conducted by Dr. F. Gowland Hopkins, M.A., F.I.C.

THE LANCET.

LONDON: SATURDAY, MAY 6, 1905.

Underfed Children.

THE Order concerning underfed children which has been recently issued by the Local Government Board and explained and enforced by a circular letter from the Board of Education, is one which will be regarded from very different points of view by different persons. It imposes upon the managers of elementary schools the duty of discovering and of reporting to boards of guardians all instances of underfeeding among the children and it imposes upon boards of guardians the duty of seeing that necessary food is supplied, either as ordinary relief or as a "loan" to the father which may be recovered from him, if necessary, by county court process. It empowers the county court judge to make an order upon the employer of the father, under which the necessary portion of any wages due to the latter must be withheld from him and handed over to a court official. These somewhat drastic proceedings will, of course, be cordially welcomed by many who might be described primarily as educationists and who believe, as the matter has before now been stated, that the effects of schooling bear some analogy to those of a laminaria tent and that the introduction of compressed facts will suffice to bring about the mechanical expansion of the budding intellect. To such people schooling is the primary necessity of modern life, the one agency to which they look with hopefulness for the maintenance or the improvement of our position among the nations, the chief means for enabling us and our children to speak forcibly to the enemy in the gate. The Order will be equally welcome to the philanthropists who are prone to overlook the existence of two sides to every question and whose hearts have been wrung by piteous descriptions of the sufferings of vast numbers of half-starved children, whose parents, it is alleged, habitually spend in drink or in tobacco the money which should be used to procure food for their offspring. By the public generally it will probably be regarded as a well-intentioned and therefore praiseworthy endeavour to deal with an admitted evil but surely as an endeavour the character of which can hardly be correctly estimated except under the guidance of experience. There will at least be universal agreement with the view expressed by the Board of Education to the effect that the cost of obviating the consequences of parental neglect, when the existence of this is well established, should not be suffered to fall upon the ratepayers.

The whole principle of the Education Acts must be taken to rest upon the assumption that the children of the nation are, at least to some extent, the property of the nation and not the exclusive property of their parents. It rests, furthermore, upon the assumption that to suffer these children to grow up in ignorance will diminish their prospective usefulness to the State and that the State on this ground has a right to send them to school. If these propositions be admitted it certainly follows that the State has at least an equal right to concern itself with the prevention of any other unfavourable conditions by which eventual usefulness would probably be diminished; and this description would include not only underfeeding but also residence in unwholesome houses and, generally speaking, exposure to insanitary or demoralising conditions of any kind. Every argument which can be urged in support of the position that the State is called upon to intervene in order to cause children to be sufficiently fed can be urged with equal force in support of the position that it is called upon to intervene in order to protect them against small-pox and its sequelæ by compulsory vaccination, or against tuberculosis by the reform of slum dwellings, or against an inheritance of syphilis or of imbecility as a consequence of a marriage which due consideration of its probable consequences would have prohibited. The assumption of State property in the young, and consequently of State responsibility for their welfare, is manifestly one which may entail operations of indefinite magnitude and extent, only the smallest beginnings of which are as yet coming prominently before the public view; and the principle that it is the business of the State to remedy the neglects of parents, and to compel the parents themselves to defray the cost of the necessary proceedings, is one of which the full reach and the ultimate applications may at present be impossible to foresee. It is by no means to be accepted with a light heart or without much consideration alike of the consequences to which it may lead and of the methods which may be found necessary in order to reduce it to practice. All that seems at present to be decided is that every child in an elementary school who seems to the teachers or the managers to be underfed wil be supplied with food at the primary cost of the ratepayers and with some uncertain prospect of eventual recovery of the expenditure from the father.

It is only too well known to all who are concerned in the practical work of education that what may properly be called underfeeding is lamentably common and that children are constantly sent to school without having had any proper breakfast or without having any reasonable prospect of a proper dinner. The evidence rests partly upon their weakly condition, partly upon their answers to the questions that are put to them. As long as these answers can have no worse effect than to produce a probability of charitable feeding they are likely, within limits, to be true and trustworthy, but as soon as they become convertible into evidence against parents they are almost certain to assume a different character. Not only will the children be in fear of domestic consequences if they speak the truth but they will also be actuated in many instances by a desire to screen their parents prompted by the habitual attitude of their class towards persons in authority or towards the law. The teacher may suspect underfeeding and may fail to obtain any confirmation of the suspicion from the pupil. In such circumstances, we presume, the question would frequently be submitted to medical examination and some medical practitioner would be officially

invited to act as an expert and to pronounce an opinion upon which proceedings might be based. He would often find himself confronted by physical conditions suggestive of underfeeding and by positive statements of an opposite character; and the diagnosis of *underfeeding*, as distinguished from under nourishment dependent upon other causes, would have to be established with a degree of precision which, so far as we are aware, has not previously been required. In the somewhat analogous difficulties which may arise in connexion with the Factory Acts the opinion of the medical officer that the age of a child has been overstated by the parent is always open to correction by an appeal to the register of births, but in a case of suspected parental neglect the case would often be extremely difficult of proof. It would obviously be the duty of the school managers and of the guardians to give a child the benefit of the doubt and to supply him or her with food, but it must be assumed that the county court judge, before condemning the father to make good the cost of the supply, and especially before making an order upon the father's employer with reference to wages, would require strict legal proof of the neglect which was urged against the defendant. It is not difficult to foresee that this requirement could only be fulfilled by medical evidence, nor can it be doubted that in many densely populated places defensive organisations would come into existence, lawyers would be employed, and medical witnesses would be closely cross-examined with regard to the grounds of their opinions. The *Times* has already made the suggestion that underfeeding, in a certain proportion of cases, may be due as much to ignorance as to neglect, and in these cases the difficulties might often be very great. A father who brought home his wages and whose personal expenditure was reasonable would receive universal sympathy if he were brought before a court of law on a *quasi* criminal charge for no other offence than that of having married a wife who was a bad manager, or who was entirely ignorant, probably from want of instruction, of the requirements of growing children. Questions might arise, moreover, in the case of a family which had been supplied, perhaps even liberally, with Someone's condensed milk or with Somebody else's patent food, both of them preparations extensively advertised in the locality, both notoriously deficient in the qualities which they were asserted to possess, and concerning which neither the board of guardians nor the Education Board had issued any warning to the unwary. We fully agree with many of our contemporaries in their approval of the principle of the new Order and of the care for the welfare of children by which it has evidently been dictated; but we are unable to conceal our sense of the difficulties which are likely to be encountered in its application, or of the extent to which it may cast heavy responsibilities upon medical officers of health or upon the medical attendants of schools in poor districts. These gentlemen can hardly be too prompt in arriving at some general agreement concerning the diagnosis of underfeeding, or concerning the methods of distinguishing between an insufficient and a merely improper supply. They will almost certainly be required to justify with regard to both these questions any opinions which they may be officially called upon to express.

The Promotion of Scientific Research.

WE imagine that only wilfully and woefully ignorant minds would be indifferent to the question as to whether or not there should exist the strongest incentives to scientific research, but how to create incentives which shall not detract from the dignity of such labour it is not easy to suggest. In a recent publication[1] the author boldly proposes an organisation based upon such principles as would admit of the systematic and extended application of public funds adequate in amount and so directed as to be productive of such valuable results as would warrant their expenditure. It is true that there are incentives to invention but there is none to the pursuit of natural truth except the joy of discovery and Mr. WALTER B. PRIEST maintains that some practical stimulus should be given to the latter just as the inventor is encouraged to invent by the promise of obtaining a financial success for his invention in which he is materially helped by the patent laws of the country. In a word, the world richly subsidises the inventor while the investigator of natural truth (upon the results of whose labours the inventor is dependent for the material upon which he founds his new conceptions) has none of his valuable privileges. Mr. PRIEST remarks with absolute truth that there cannot be applied science unless there is science to apply. Discoveries are made which in themselves have no marketable value and which, therefore, gain no protection from the Patent Office, though these discoveries may promote the health of the public and may have innumerable applications which give birth to new industries and which increase the comforts, the convenience, and the luxuries of life. It is proposed that some compensation in the shape of grants provided out of the public purse should be awarded to those who bring natural truth to light.

The reward of money as an incentive to scientific research on the face of it seems to be opposed to the best traditions and ideals of such work. Money and fame may not be synonymous terms but they are both rewards, and of these the latter is surely the *monumentum aere perennius*. It would be absurd to deny the value of money as a stimulus to original research; indeed without it there could be no research at all. In one respect at any rate this is unfortunate as obviously only those who possess means over and above what is needful for the necessaries of life have a chance of practically testing their capacity for research. There must be many persons gifted with originality of design and idea who owing to their penurious circumstances never have the opportunity of cultivating the faculty or of applying it to practical purposes. In such cases endowment must obviously precede reward if the plan proposed by Mr. PRIEST is adopted. He makes, however, the singular mistake, we think, of deprecating the remuneration of persons for the work of research on the ground that the expenditure of money so supplied is likely to miscarry through abuse. Surely the worker in a properly organised system of research is chosen as well for his integrity of purpose as for his capacity of investigation and he must necessarily present from time to time an account of the work which he has

[1] A Scheme for the Promotion of Scientific Research, by Walter B. Priest. London: Stevens and Sons, Limited. 1905.

done. It must not be forgotten, moreover, that very often there is considerable value in negative results. "People do not understand," said in effect a celebrated chemist engaged upon a difficult investigation, "that a thousand pounds may easily go down the sink without a single positive result being scored." Negative results are oftentimes of great value as when they clear the ground and narrow the field of future operation. We doubt very much whether there is ever any serious or wanton waste of the moneys that are devoted to research work, and it must be borne in mind that whether positive results or negative results are obtained there is bound to be a gain to the sum of human knowledge in either case; otherwise research work may as well be given up. A serious difficulty in connexion with Mr. PRIEST'S scheme would be, it seems to us, in the matter of ascertaining the person who was really entitled to the award. A general principle of production or preparation, for example, is discovered which may not have directly any valuable application, although a great number of new substances may be prepared by its means by many independent workers. At length one worker by some simple modification in detail, but still pursuing the original principle, produces a valuable preparation. Who should fairly be the recipient of the award in such case? Then, again, if the money were divided the portions might be infinitesimal and not worth acceptance. At all events, it is possible that the actual discoverer of the new substances might prove to be a far less meritorious investigator than the discoverer of the principle and some difficulty would be experienced in finding amongst a numerous body of investigators the real originator of the method. *Palmam qui meruit ferat.* But the best reward to the discoverer of great natural truths can surely never take the form of money. To award money in general would not be calculated to add, we fear, to the dignity of scientific labour and research. HARVEY, JENNER, PASTEUR, and LISTER received no award from the public funds in the sense that Mr. PRIEST proposes nor were they stimulated to the prosecution of scientific work by the prospect of pecuniary remuneration. They laboured, as most men of science have done, not for themselves but for others. The merest contemplation thus shows how difficult it is to suggest a working scheme for the creation of fresh incentives to scientific research.

Nevertheless, there cannot be too much earnest scientific research and we wish that the opportunities for research were far greater than they are. It seems, however, to be a pity to suggest that the spirit of research can only be vitalised by the promise of pecuniary reward. It is a totally different thing when funds are supplied for the purposes of maintaining the practical work involved in scientific inquiry and providing the necessary material. Lastly, it is a curious fact that in those countries in which a recognised system of State-aided research exists the results have not been a particularly brilliant gain to science, whereas in countries, amongst which we are proud to include our own, where research receives small encouragement from the State the discoveries have been considerable and of first importance. This may not be, however, the fault of endowment but is probably owing to the choice of men who are not as fully equipped as they should be for the peculiar nature of the task or who do not possess the true intuition of the discoverer. What this country lacks most is not so much the spirit of inquiry as the faculty of applying the results of such inquiry to practical purposes.

The Prevalence of Plague in India.

THE "Treatise on Plague" by Professor W. J. R. SIMPSON, which is reviewed in another column, appears at an opportune moment, and we are in hopes that it will effect the probable purpose of the writer—viz., the awakening of the public conscience. The real meaning of the appalling figures which we have been able to publish from time to time in the last two years in respect of deaths from plague in India seems to have escaped the attention of all but a few persons, but our Special Correspondent's words, which may have appeared exaggerated to some of our readers, are clearly justified by the official figures given by Professor SIMPSON in regard to the ravages which plague has committed. In 1903 the number of deaths from plague in India was 853,000; in 1904 it was over 1,000,000, being 1,040,000. Of the 1,000,000 deaths more than 350,000 occurred in one province, and that province was the Punjab, the one from which some of our best Indian soldiers are recruited. Consider the possible significance of a fact like this upon the efficiency of our Indian Army. The Punjab is not a large province, its actual population being about 20,000,000, or only two-thirds that of England, and yet the deaths in the Punjab during 1904 from plague amounted to over 250,000 in the course of 12 weeks only! We believe that these figures, which have been published before, have never been contradicted, though they seem incredible. What would be thought, said, or done in England if in the course of 12 weeks over 250,000 persons were swept off by one disease? Surely there would be something like a panic. And if this destruction threatened to be an annual one would not any inactivity on the part of the authorities in whom prevention is vested be deeply resented? We think that the feelings that would be aroused among us if this dreadful tragedy were at our doors should to some extent be excited by our sympathy with the Indian people. Our compassion has been deeply moved by the lamentable loss of life caused by the great earthquake in Northern India and help of a practical kind has been organised on behalf of the sufferers. But the deaths at the most from this catastrophe were not more than 10,000, or 1 per cent. of the deaths from plague last year. The English public has, of course, not realised the position and though we are not playing the alarmist with any special relish for the office we think that the policy of concealment—or the absence of policy that has necessitated concealment—has gone on long enough. The small number of deaths from plague in Hong-Kong and the Mauritius is regularly published every week in the daily papers and presumably the information comes from official sources, but the mortality which occurs in India from the same disease, and which by its magnitude is a danger not only to India but to the world, is never published—it is not considered wholesome reading. The public is not aware from official information of the terrible tragedy going on in one part of the empire—in that part which is always termed the brightest jewel in the possession of the Crown, for whose

welfare we are nationally responsible and for whose possession and maintenance some of the noblest British blood has been shed. Now and again a frank correspondent, like our own, or a question in the House of Commons will give a picture of the actual condition of affairs, and one of the questions recently asked in the House of Commons elicited a statement from the Secretary of State for India that over 200,000 persons had died from plague in India during January and February of this year. To this statement was added the information that a committee would sit in London to consider the scientific aspects of the question and that two bacteriologists would go out to India to study the disease. We have commented in THE LANCET upon the inquiry undertaken jointly by the Lister Institute of Preventive Medicine, the India Office, and the Royal Society, the first-fruit of which is to be the despatch of two bacteriologists to the East, and while allowing that the idea of the inquiry is a sound one we have pointed out that we do not think the measures to be undertaken really meet the case. Three and a half millions of people have died from plague in India since 1896, and the proposal to send out two bacteriologists to look into the causes of the tragedy strikes us as inadequate, however capable and distinguished the gentlemen connected with the joint inquiry may be, and indeed are. The surplus of the Imperial Indian exchequer this year is £4,000,000 sterling. Some part of this surplus might well be used to set in motion machinery having for its object seriously to combat plague, so that something more practical, larger in design and more likely to lead to real and early preventive measures, might be undertaken.

Annotations.

"Ne quid nimis."

THE INDUSTRIAL CLASSES AND THE TREATMENT OF TUBERCULOSIS.

AT the annual meeting of the Hospital Saturday Fund held on April 28th, Dr. Arthur C. Latham drew attention to several important points in the treatment of tuberculosis amongst the industrial classes. The value of the sanatorium treatment is now generally recognised but there are certain facts connected with it that have not been sufficiently appreciated by the laity, more particularly amongst the working classes. The first is the importance of an early diagnosis; secondly, that a sufficient time must be devoted to treatment; and thirdly, that after leaving the sanatorium an outdoor occupation must be adopted. The difficulties of carrying out these recommendations will be at once obvious. Dr. Latham maintains that the charitable institutions which deal more particularly with tuberculosis are not established on right principles in this country and there is doubtless much to be said in support of this contention. He states that if the full economic value of the money spent in the treatment of tuberculosis is to be obtained the following reforms are essential: 1. There should be a number of institutions, municipal or other, such as the French dispensaries, where, on payment of a small fee, any working man or woman in a suspicious state of health could have the expectoration examined—this plan greatly facilitates the early recognition of the disease. 2. All hospitals should be brought into close connexion with the various organisations which exist for the relief of the poor, so that the patients can be assisted in obtaining admission to special institutions. 3. The "pernicious system" of in- and out-patient letters to the hospitals should be discarded and "cases should be admitted on their merits." The point thus raised is an important one but is so involved that we cannot enter into a discussion on it here. 4. Every "consumption hospital" should be in close touch with sanatoriums in the country to which patients could be sent from the town hospitals. If these proposals were carried out some of the difficulties which now exist would be removed but others would remain. One of the chief of these is the support of families whilst the bread-winners are in the sanatorium. As soon as a patient finds that he is improving he is naturally anxious to return to work so as to earn money for those dependent on him and so he leaves the institution before the processes of repair are satisfactorily established. Dr. Latham referred to the well-known German methods of insurance but expressed his belief that this plan would not be adopted in England. He therefore made an appeal to the friendly and allied societies to take the matter up for the benefit of their members. He believed that these societies have the money and the necessary organisation. He stated that a beginning had already been made and that the friendly societies of the Midland counties have formed an association for this purpose. He also referred to the National Committee for the Establishment of Sanatoria for Workers which has been formed at the initiative of the Hospital Saturday Fund. The friendly societies, Post-office employés, trade unions, employers of labour, and all other classes interested in the subject are invited to coöperate. Such an organisation is likely to be most valuable and we wish it every success. Dr. Latham's address was a practical and suggestive one and doubtless it will receive due attention.

EPSOM COLLEGE.

WE have received from Dr. J. H. Galton, the chairman of the finance committee of Epsom College, an appeal on behalf of the benevolent side of the institution. As most of our readers are aware, the College gives gratuitously to 50 sons of medical men in necessitous circumstances a first-class education, with board, clothing, and maintenance, and provides pensions of £30 a year for 50 poor aged medical men or the widows of those deceased. The pressure of unexpected heavy sanitary expenses has so crippled the resources of the College that the council has been compelled to increase the mortgage from £10,000 to £14,000 and to incur a debt of £2000, money advanced for immediate necessities by the bankers. Last year a sum of £1600 was spent on account of repairing and renewing the drainage system of the College and it is estimated that a further sum of £3300 will have to be expended in order to bring the sanitary condition to that degree of perfection which should exist in the case of a college governed by a council chiefly composed of medical men. It is hardly necessary to state that the present governing body is in no way responsible for the condition of affairs which has necessitated this enormous expenditure; perhaps no past council can be fairly considered to be answerable, since the system of laying drains in vogue from 30 to 50 years ago was primitive compared with the rigid requirements of our present sanitary authorities. The council considers the present year, when the jubilee of the opening of the College is to be celebrated by old Epsomians, to be an excellent occasion for making a strenuous effort to wipe away the indebtedness of £16,000. The amount is trivial compared with the sums appealed for by other charities and if the majority of medical men, in whose interest the institution was founded by Mr. Propert, were to make a genuine effort to procure this sum the College

would be freed from debt, perhaps for ever. When it is recollected that there are over 38,000 medical men on the Register it will be seen that not much self-sacrifice is required on the part of each member of the profession to raise the sum of £16,000. Few persons can be more fully aware than we are of the slender incomes of very many members of the profession, but we are as fully aware of the good work done by the benevolent side of Epsom College, and know that a restriction of this work would be little short of a calamity, since it would tax the already overstrained funds of the other benevolent agencies of the profession. The council has issued with the appeal a list of the educational successes which have been gained since 1893 and these for a school of about 340 boys are most satisfactory. No fewer than 24 open scholarships have been gained at the Universities of Oxford and Cambridge; 140 boys have passed the matriculation examination of the University of London, 80 of whom were in Division 1; 38 boys have passed the preliminary scientific examination for the degree of M.B. of the University of London, and 41 boys have passed a part of that examination; 88 higher certificates of the Oxford and Cambridge Schools Examination Board, with 23 distinctions, and 293 lower certificates have been gained. The fee charged for boarders is 75 guineas a year but all sons of medical men are allowed a reduction of ten guineas. Day boys are charged 25 guineas, and sons of less fortunate members of the profession can compete for "council exhibitions," which reduce the fee from 65 guineas to 35 guineas. There are also open entrance scholarships awarded annually of the value of £30 a year. The work of the council in steering the College through the numerous financial difficulties which have arisen during the past few years has been onerous in the extreme and no one has worked with greater energy than the treasurer, Sir Constantine Holman. It is to be hoped, therefore, that all friends of the College, especially old boys who have benefited by the sound education provided at a moderate fee, will come to the assistance of the council and the treasurer at the present time when funds are so urgently needed.

ANNUAL REPORTS OF THE PROGRESS OF CHEMISTRY.

THE decision of the council of the Chemical Society to issue a systematic series of reports in English on the progress of chemistry in its several divisions and applications will be cordially welcomed. Practical effect has already been given to this decision, for we have recently received a copy of the Annual Report on the Progress of Chemistry for 1904.[1] We heartily congratulate the Chemical Society on the fulfilment of the scheme and, judging by the first volume, it is quite clear to us that these annual reports will be of extreme value. In the words of Dr. W. A. Tilden, in his introduction to the report, the object of the reports is to present an epitome of the principal definite steps in advance which have been accomplished in the preceding year for the benefit of all workers, students, or teachers of chemistry, or those chemists who are engaged in technical or manufacturing applications of chemistry. Thus those who make a special study of any one department of the science may obtain without difficulty information as to the nature and extent of progress in other branches of the subject to which they have not paid special attention. In accordance with this object the council invited the assistance of a number of gentlemen distinguished for their acquaintance with the several divisions of the subject and the result is a series of reports contributed by admitted authorities on the various sections of the science. Necessarily the report cannot be placed in the hands of the Fellows of the society until a month or so after the close of the year. In the report just published, which deals with the progress of chemistry for 1904, ten articles are contributed. The first is by James Walker, D.Sc., Ph.D., F.R.S., on General and Physical Chemistry, in which he deals, amongst other things, with the researches of the year on colloidal solutions, fluid crystals, catalysis, enzyme action, and passivity of metals. The second article, on Inorganic Chemistry, is written by P. Phillips Bedson, M.A., D.Sc., and consists of an admirable *résumé* of the year's contribution to the chemistry of the inorganic elements. Organic chemistry comes next and is divided into two sections, the aliphatic series by H. J. H. Fenton, M.A., F.R.S., and the aromatic series by Julius B. Cohen, Ph.D. The article on Stereo-Chemistry is by William Jackson Pope, F.R.S., F.I.C.; that on Analytical Chemistry by A. C. Chapman, F.I.C.; that on Physiological Chemistry by W. D. Halliburton, M.D., F.R.C.S.; that on Agricultural Chemistry and Vegetable Physiology by J. A. Voelcker, M.A., Ph.D.; that on Mineralogical Chemistry by A. Hutchison, M.A., Ph.D.; and the last article on Radio-Activity is by Frederick Soddy, M.A. These articles all afford extremely interesting reading and the whole scheme will be most helpful to those who desire to keep *au courant* with the trend of modern research.

[1] London: Gurney and Jackson, 10, Paternoster-row.

THE "CHINESE SPY" ON MEDICINE AND SURGERY.

THE "Chinaman" who has recently so severely satirised America's love of quackery may have drawn the idea of his theme from the "Chinese Spy," a work published so long ago as 1766. In Letter XIII., Book VI., of the "Chinese Spy," the mandarin Cham-pi-pi, writing from London to his friend, Kie-tou-na, in Peking, draws a gloomy picture of the state of contemporary science and denounces medicine and surgery with an acrimony impartially used by the satirists of the eighteenth century towards all medical men, whether good or bad. "This letter," he says, "shall be taken up with physic, that dreadful science, which has got the life of man within its gripe. There are companies in Europe who have a licence to kill: these sentences of death are called a physician's prescription. The practice of this science is thus: A man in black, of a solemn deportment, comes into a sick person's chamber: after asking some questions concerning his illness, he writes down on a paper the medicaments proper for curing him; and a few days after the death of the patient, this black man comes and asks payment for his cure: nay, there are countries in Europe where a dead person cannot be buried, till the physician who killed him be paid. The annals of the universe inform us, that anciently only one family was acquainted with physic; and greatly is it to be wished, for the sake of mankind, that this science was still a family-secret. At present, any one who pleases may practise physic; and all the mystery is, to learn, in a few years, the cures of all kinds of distempers. This science has been rendered more destructive by adding to it surgery, which is the art of slashing bodies and dissecting carcasses. Physicians, in order to come at a knowledge of the human body, cut it into a thousand pieces; and, besides shortening the life of men, they kill them a second time when dead. Europeans will very gravely ask, whether we can do without physicians? This is asking, in other words, whether God has created a nature so imperfect, that it cannot subsist without the help of art. What physicians have animals? This decides the question. The annals of the Christian religion mention a king, named Hezekiah, who suppressed a book on the virtues of plants, lest it might come into use, and thus multiply distempers: it were proper to suppress physic, that everybody, having no other recourse, might become his own physician." Who was the "Chinese Spy"? Could he

have been an embittered medical man, such as Tobias Smollett, some of whose most mordant satire was written in the "sixties" of the eighteenth century.

EPIDEMIC CEREBRO-SPINAL MENINGITIS.

IT is of interest at the present time to refer to the epidemic of cerebro-spinal fever which occurred in Dublin in the years 1866-67, an account of which was published in two papers in the columns of THE LANCET of July 6th and 13th, 1867, together with a leading article discussing the nature and the character of the disease. The first of these papers dealt with the cases arising among the troops and was written by Staff-Surgeon (now Surgeon-General) J. A. Marston, who recorded there some 27 cases among soldiers or their relatives and out of this number 22 died. The cases occurred chiefly in the various barracks at Dublin but a few were recorded from the Curragh and from other parts of Ireland, while a flying column engaged in suppressing a Fenian rebellion also afforded one or two cases. Some confusion arose owing to the coexistence of cases of typhus fever at that time lending colour to the view held by the late Dr. Murchison that cerebro-spinal fever was but a variety of typhus fever. The cases appear to have been of severe character and were very frequently associated with purpuric eruptions, whence the name "malignant purple or purpuric fever" applied to it. Staff-Surgeon Marston divided the cases into two groups—the first comprising those associated with profound toxæmia, or, as he described them, "presenting symptoms expressive of a profound blood poisoning," and proving speedily fatal. The second group consisted of cases showing symptoms typical of meningitis, "the convulsion, the retraction of the head, the spastic contraction of muscles, &c." Some of these cases recovered and Staff-Surgeon Marston commented on the protracted character of the convalescence. The second paper was by Dr. E. D. Mapother, then medical officer of health of Dublin, and dealt more generally with the subject. He also recognised two types of the disease corresponding in all details with those of Staff-Surgeon Marston. The disease was not notifiable and there was no registration of diseases, so that only the fatal cases could be investigated from a statistical point of view. Up to July, 1867, 63 fatal cases occurred in the Dublin district (including Kingstown, Donnybrook, and Rathmines) among a population of 314,409 persons. Of these fatal cases 41 were investigated by Dr. Mapother as medical officer of health; the average duration of these cases was 42 hours, 14 of them having terminated within 24 hours. The sex incidence of these fatal cases was found to be nearly equal, 20 being males and 21 females. With regard to age, the greater number of the cases occurred among young people. "As to rank in life," to quote Dr. Mapother, there were "a young nobleman, three medical students, two undergraduates, several persons in well-aired and well-drained houses, and some from wretched tenements where typhus always abides." In only two instances was a possibility of contagiousness suggested and in both of these the sanitary conditions were of the worst. Dr. Mapother considered that excitement and fatigue were to be regarded as predisposing causes. During the period of this epidemic a somewhat similar disease called "purples" was said to have been rife amongst pigs and this is stated to have been the case in the epidemic of cerebro-spinal fever of 1846 in Dublin and Belfast. Dr. Mapother on the whole inclined to the view of Dr. Murchison that the disease was a variety of typhus fever and quoted a suggestion of Dr. Farr that the cases with purpuric eruption might be "only typhus seizing the scorbutic." In the leading article on the subject in THE LANCET of July 6th, 1867, the nature of the disease is critically considered and in it is recorded the discussion on the above papers at the Epidemiological Society, before which, under the presidency of Dr. (afterwards Sir William) Jenner, they were read. Dr. Jenner, with characteristic acumen, pointed out "the very startling difference" between epidemic cerebro-spinal fever and typhus fever—namely, "that while true typhus rarely affected children and was still more rarely fatal to them, the Dublin disease frequently affected children and was most fatal to them." Dr. A. P. Stewart also pointed out that, "unlike typhus, the Dublin disease prevailed equally among the well-to-do and the ill-to-do and that no typhus eruption had been observed." The view that a scorbutic taint plays any rôle in determining the clinical or pathological features was also destructively dealt with in this leading article and the conclusion arrived at was that the Dublin disease was the epidemic cerebro-spinal meningitis of continental and American writers, a view in which Dr. (now Sir John) Burdon Sanderson, who had investigated the outbreak of the disease at Dantzig in the two previous years, concurred. The study of the cases is nowadays rendered simpler by bacteriological investigation which seems to have substantiated the view that epidemic cerebro-spinal fever is a primary meningitis and a disease *sui generis* due to the definite organism of Weichselbaum, although it must be admitted that a primary meningitis due to the pneumococcus does exist and may possibly occur in epidemic form. In our issue of April 29th we published an abstract of an important paper by Dr. W. T. Councilman, who has done so much to clear up this question, on the bacteriology of meningitis in general and an interesting clinical lecture by Dr. J. A. Ormerod on two cases of meningitis, illustrating some points in the pathology of this condition. We publish in another column a letter from Dr. J. Hope Reford describing three cases of meningitis occurring in one family in Ireland about a year ago, of which one was fatal, the other two cases convalescing rapidly. All three cases developed a petechial rash in addition to the ordinary symptoms of meningitis. Unfortunately the complete proof of their nature is lacking owing to the absence of a bacteriological examination. This is the more to be regretted since the close relation between them strongly suggests the possibility of direct contagion, the occurrence of which is so rare in cerebro-spinal fever. A point of interest about this group of cases is the decreasing severity of the later ones—a condition which is the rule in epidemics.

THE CENTENARY OF THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

ON Monday, May 22nd, which is the anniversary of the founding of the society, the President, Sir Richard Douglas Powell, President of the Royal College of Physicians of London, will hold a reception at 5 P.M. at the society's rooms, 20, Hanover-square, when the new Honorary Fellows will be welcomed. The centenary festival banquet will be held at the Hotel Cecil on Monday, May 22nd, at 8 P.M., when His Royal Highness the Prince of Wales, who has signified his intention of being present, will be admitted an Honorary Fellow of the society. The centenary conversazione will be held on Wednesday, May 24th, at 9.30 P.M., at the Natural History Museum, Cromwell-road, S.W. All communications with regard to these meetings should be addressed to the Secretary, 20, Hanover-square, W., who asks us to announce that the reception of the Fellows and guests for the dinner will be at 7.30, and it is especially requested that they come not later than 7.45, and those Fellows who desire to sit together at the dinner should communicate with the Secretary at once. A few seats in the gallery of the dining-room will be reserved for ladies who wish to hear the

speeches after dinner and for these also applications should be made to the Secretary. A meeting of the society will be held on Tuesday evening, May 23rd, at 8.30, during the centenary festival of the society, when Dr. H. Head will deliver the Marshall Hall Prize Address. With regard to the conversazione on the following evening tickets of admission have been sent out and all applications for further tickets should be made at once. A Centenary Volume, containing a history of the society and a short account of its presidents, has been written by Dr. Norman Moore and Mr. Stephen Paget, and each Fellow will receive a copy. It is also proposed to have an exhibition at the society's house of books, portraits, instruments, and so on, of 100 years ago.

THE ADMINISTRATION OF OPIUM ALKALOIDS BY DIRECT INHALATION.

ABOUT the year 1864 Dr. A. Helwig of Mainz in Germany discovered that when morphine, strychnine, brucine, and several other vegetable alkaloids were cautiously heated a portion sublimed unchanged and could afterwards be submitted to the ordinary well-known chemical tests. His results at first appeared as articles in journals but were ultimately collected in a treatise, "Das Mikroskop in der Toxikologie," which was published at Mainz in 1865. In 1867 Dr. W. A. Guy of London published a memoir "On Microscopic Sublimates and especially on the Sublimates of the Alkaloids," and in the edition of his "Forensic Medicine" which appeared in 1875 he described at length the improvements which he had made in Helwig's original process. Helwig placed the alkaloid in a hemispherical depression made in platinum foil, covered it with a glass microscope slide, warmed the foil gently with an alcohol lamp, and observed the sublimate which was formed. He says that the morphine sublimate was a perfectly homogeneous layer of sharply defined round granules closely packed together (*besteht aus einer ganz homogenen Schichte dicht aneinander gelagerter runder sehr scharf conturirter Körnchen*) without any trace of crystallisation. Instead of platinum foil Dr. Guy used a closed cell of which a shallow glass ring formed the sides and two microscope cover glasses the top and the bottom, the whole being warmed on a hot brass plate provided with a thermometer. Mr. A. Winter Blyth, medical officer of health and analyst of St. Marylebone, used for the same purpose a somewhat different process which he has fully described in his treatise on "Poisons" published in 1884. Retaining Dr. Guy's glass cell, he allowed it to float on a bath of mercury or fusible metal in which the bulb of a thermometer was immersed. The bath with its contents was covered by a glass screen and heat was supplied by a lamp underneath. Mr. Blyth found that morphine at 150° C. clouded the upper disc of the cell with a nebula consisting of minute dots; these dots gradually became coarser and were generally converted into crystals at 188° C. The liquefied morphine in the bottom of the cell turned brown at or about 200° C. Although the volatility of morphine and some other alkaloids has therefore been known to chemists for many years it does not seem to have received much attention from therapeutists. Dr. Herbert Snow, writing very recently to us on the subject, mentions that the late Dr. J. L. W. Thudichum was an advocate of the use of opium by means of the Chinese opium pipe in certain conditions and employed this method of administration extensively in asthma, tuberculosis, and a large number of other maladies in which spasm, pain, or progressive emaciation was a leading feature. Dr. Snow wrote in a similar sense in 1890 and still recommends the same method for cancerous patients as a most useful adjunct to other treatment in inoperable cases. He is convinced that this means of bringing medicinal substances into direct contact with the pulmonary air cells may be usefully resorted to for the administration of a variety of alkaloids or extracts containing alkaloids other than those found in opium and he believes that its introduction into the treatment of maladies of the chest would involve a beneficial new departure in therapeutics. Employed under the limitations specified by Dr. Snow and Dr. Thudichum the suggestion may prove serviceable but in all circumstances practitioners who may follow it must be on their guard against a possible encouragement of the morphine habit among either patients or their friends.

HOURS OF SLEEP FOR SCHOOLBOYS.

AT the conference of school hygiene which was held in London in February last under the auspices of the Royal Sanitary Institute a resolution was passed calling attention to the need for giving ample hours of sleep to the younger boys at the public schools; this resolution has been approved by the council of the institute which has expressed the opinion that in some of the public schools the present hours of sleep are insufficient. A discussion on the same subject will be opened at the next meeting of the Medical Officers of Schools Association, which will be held in the Medical Society's Rooms, 11, Chandos-street, Cavendish-square, on May 11th at 4 P.M., when Dr. T. D. Acland will read a paper on the Hours of Sleep which are desirable for the younger boys at Public Schools. The matter is one of considerable importance to the well-being of growing boys and it is hoped that there may be a full meeting both of schoolmasters and of medical officers of schools so that the discussion may be the means of calling the attention of the public school authorities to a question of hygiene on which those who have studied the subject are practically unanimous but which in many schools has not secured sufficient attention.

REGENERATION OF THE FIBRES OF THE SPINAL CORD.

CONSIDERABLE doubt has been expressed as to whether regeneration of the fibres of the spinal cord can occur. In discussing transverse myelitis Sir William Gowers refers to the possibility of regeneration and mentions a case of extensive destruction of the cord with symptoms resembling those of transverse division. After many months a fair return of motion and sensation took place. After the lapse of five years death occurred from an intercurrent ailment. Sections of the cord at the seat of the myelitis, in the pyramidal tracts, and in other areas, showed some minute fibres where normally only large ones are found. These appeared to be regenerated fibres. In the *Montreal Medical Journal* for April Dr. D. A. Shirres has reported the following case as showing the possibility of regeneration. A man, aged 48 years, was admitted into the Montreal General Hospital under the care of Dr. Armstrong, suffering from fracture-dislocation of the spinal column in the region of the ninth and tenth dorsal vertebræ with flaccid paraplegia, complete loss of sensibility and of the superficial and deep reflexes in the lower limbs, and retention of urine and fæces. Dr. Armstrong removed the laminæ of the ninth and the tenth dorsal vertebræ. On opening the dura mater the cord was found completely severed with a gap of fully half an inch between the ends. On stimulating the anterior roots of the first and the second lumbar segments or on stimulating the posterior roots with a faradic current the muscles of the leg contracted. This observation was carried out because of the controversy as to the symptoms of transverse division of the cord. Dr. H. Charlton Bastian and others hold that total transverse division produces flaccid paraplegia and permanent abolition of reflexes. Others believe that while flaccid paralysis may occur at first sooner or later it becomes

spastic. According to these writers if flaccidity persists there is not only transverse division of the cord but destruction of the nerve centres in the lumbar region. The observation showed that these centres were not destroyed. Faradic and galvanic stimulation of the muscles was prescribed so as to keep them in as healthy a condition as possible. After six months the flaccid paralysis persisted, showing the correctness of Dr. Bastian's view and proving for the first time on record that permanent flaccid paralysis and loss of reflexes are due to removal of the influence of the higher centres and not to any concomitant injury of the lumbar centres. 11 months after the operation the recent work which had been done on the regeneration of nerves, showing that transplantation of peripheral nerves might be successfully performed, suggested to Dr. Shirres that the transplantation of a piece of a dog's cord might be tried in this case. The spinal cord of a large dog was exposed under chloroform while the operation on the patient proceeded. The lesion was exposed and the gap between the ends of the cord was found to be now one and a half inches. With a mild faradic current the anterior and posterior roots of the cord were stimulated and a slight response was obtained in the muscles. Three inches of the dog's cord were placed in the gap and the pia arachnoid was united to that of the patient by a few fine stitches. The dura mater was closed, the wound was sutured, and a plaster jacket was applied. Perfect recovery from the operation took place and the temperature never rose above 100° F. In the fifth week after the operation the patient was conscious of flatus in the lower part of the abdomen, a sensation which he never had before the operation. Six days later he felt the passage of the catheter when the usual lavage of the bladder was performed. Ten days later he was conscious that his bowels were about to act and he felt a sensation of pins and needles in the right foot. A week later he felt the same in the left foot. The temperature rose to 103° and the patient began to fail. After a fortnight he died. A large abscess was found in the right kidney and appeared to have been the cause of death. The cord was removed and hardened in Müller's fluid. After six weeks the dura mater was opened and a diffluent mass was found between the ends of the cord. Sections were made above and below the lesion and through the dura mater and adherent mass between the ends of the cord and stained by the Pal-Weigert method. The usual ascending and descending degenerations were found. In the intermediate mass minute myelin sheaths of nerve fibres were demonstrated closely adherent to the dura mater and were traced upwards and downwards into the ends of the cord, showing that some regeneration had taken place. Dr. Shirres does not assert that the piece of dog's cord lived or that it started the regeneration. His case at least suggests that something might be done in cases of division of the cord to favour regeneration of the fibres. Dr. James Collier, in a recent paper published in *Brain*, states that experiments on animals show that after immediate suture of the cord regeneration is possible.

THE ASSOCIATION OF ECONOMIC BIOLOGISTS.

THE first congress of the above-named association was held on April 19th and 20th in the University of Birmingham, Mr. F. V. Theobald, the President, being in the chair. As the term "economic biology" is not very widely known we may state that it applies to the study of biology in reference to the application of that study with regard to its bearings on agriculture and incidentally to the arts. Long ago Darwin applied the principles of economic biology in his famous dictum that the facilities for the growth of a certain kind of clover depended on the number of old maids in any given district. The clover in question could only be fertilised by a certain kind of bee; the larvæ of this bee were eaten by a certain kind of field mouse which in its turn was eaten by cats and these cats as a rule were kept by old maids. So we find the economic biologists discussing the vagaries of the life of the hop aphis, and the President in his paper on the subject pointed out that the great thing for the hop farmer to do to preserve his hops from this aphis was to "wash his damsons early in the year and use drastic measures in destroying the hedgerows of sloe." Another interesting paper was one read by Mr. Herbert Stone on the Porosity of Wood which led up to a discussion on the best means of seasoning timber. Dr. Macdougall addressed the meeting on a parasite of the sheep, Lucilia Sericata. In the course of his paper he threw doubts upon the usefulness of the starling as a "sanitary inspector of sheep." As regards this question he had received from two widely separated districts of Scotland information from men whose opinion he valued that they traced the increase in the prevalence of sheep fly to the enormous increase in the quantity of starlings, and they suggested that the fly was attracted by the excreta which the starlings left on the sheep's backs. We should hardly think that this suggestion is plausible for the excreta of birds is mainly made up of uric acid and phosphates and would not be likely to attract a fly, more especially one the larvæ of which do not feed on excreta but live in animal tissues. If the starlings do eat the grubs of the fly we should have thought that the increase in the number of birds was the effect of an increase in the number of flies and not the contrary. The concluding paper of what seems to have been a most interesting meeting was by the President on Ticks and Flies as Agents in the Distribution of Disease; this paper will be published *in extenso*.

AORTIC REGURGITATION WITH ANGINA; LICHEN ON THE PAINFUL AREAS.

THE areas of skin in which the pain of angina pectoris is felt usually show no objective phenomenon. At the meeting of the Société Médicale des Hôpitaux de Paris on March 31st M. Gasne and M. Chiray reported the following remarkable case in which lichen planus appeared. A man, aged 31 years, was admitted into hospital. He was addicted to alcohol and had suffered from malaria, dysentery, and acute rheumatism. In October, 1904, he began to suffer from cardiac palpitation and a feeling of pulsation in the neck and the temples. In November these symptoms were increased and a constant uncomfortable sensation was felt in the præcordium which at times gave place to a severe and constrictive pain which had never the characters of definite angina, for it was not accompanied by a feeling of impending death but by one of vertigo and did not instantly cause immobility of the body. During the paroxysms the pain radiated into the left arm along its internal aspect as far as the fingers and was accompanied by a feeling of numbness. The whole arm became very warm and the veins dilated. These attacks occurred three or four times a week. On examination the apex beat was found in the sixth intercostal space and was abnormally strong. There were a diastolic aortic murmur and other signs of aortic regurgitation. The patient, who had always been very neurotic, had felt for two months acute sensations of itching, especially on the internal surface of the left arm. He had scratched himself considerably and on the pruriginous patches there were areas of lichen. There were four patches in a linear series along the internal surface of the upper arm corresponding to the distribution of the intercosto-humeral nerve. Above and outside the left nipple, in the area in which the intercostal nerves anastomose with this nerve, was another small patch. On the rest of the body only acne was observed, except in the right popliteal space where there were

some spots of lichen planus. The whole of the area of distribution of the intercosto-humeral nerve was hyperæsthetic to touch and to heat. The affected area consisted of a band on the inner surface of the upper arm and an area on the thorax extending from the third to the fourth intercostal space and from a vertical line passing two fingers' breadth outside the nipple to the posterior axillary line. M. Gasne and M. Chiray suggested that the neurotic condition of the patient predisposed him to lichen which was localised in the distribution of the intercosto-humeral nerve and its intercostal anastomoses. They thought that this localisation was due to reflex irritation provoked by the crises of angina. Such localisation is easily explained. Dr. Henry Head has put forward the view that the angina of aortic regurgitation is due to irritation of the cardiac nerves from the high intraventricular tension. According to Dr. G. A. Gibson the greater part of the cardiac plexus is furnished by the left inferior cardiac nerve—i.e., by the left inferior cervical ganglion of the sympathetic. This ganglion receives branches from the segments of the cord whence arise the eighth cervical and the first and the second dorsal nerves. From the same segments arise also the fibres of the intercosto-humeral nerve. Thus the localisation of the pain and the eruption is explained.

A SUGGESTION IN PRISON REFORM FROM FRANCE.

IN our issue of August 20th, 1904, we commented upon an experiment in prison reform carried out by Miss Charlotte Smith-Rossie. The experiment was that of giving fortnightly lectures upon sanitary subjects to women prisoners in Portsmouth prison. So successful was this work that we learn that by direction of the Home Secretary a complete system of lectures on hygiene has now been initiated at Holloway prison. Miss Smith-Rossie has lately been studying a different section of prison life in France and has been permitted to visit the children's prison of La Roquette—i.e., the Petite Roquette. The regulations under which children can be imprisoned in France differ widely from those which obtain here, but that is not the point which we wish to notice. Miss Smith-Rossie in her article, which appears in the May number of *Good Words*, lays special stress upon the way in which French child prisoners work. The reason of their doing good work and of their taking an interest in their work is that they are paid "a small sum daily in proportion to the work done, which sum can be at once spent by the prisoner himself within the prison." Work for work's sake may be all very well when the worker labours for himself, but to work for someone else without getting any credit for it takes all the heart out of the worker and we think that the French system might be adopted in our own prisons.

THE annual meeting of the Asylum Workers' Association will be held at the rooms of the Royal Medical and Chirurgical Society, 20, Hanover-square, London, W., on Friday, May 19th, at 4 P.M. with Sir John Batty Tuke, M.P., President of the Association, in the chair. The Archbishop of Canterbury has promised to attend and there will be a presentation of two gold and two silver medals awarded by the association for long and meritorious nursing service. All interested in asylum work and workers are cordially invited to attend the meeting of this association which was founded in 1895 to improve the status of asylum nurses and attendants, to provide for them "Homes of Rest and Nursing," and to enlist public sympathy in their work.

THE Glasgow University Club, London, will dine at the Trocadéro Restaurant, Shaftesbury-avenue, London, W., on Friday, May 26th, at 7.15 P.M., when Professor Sir William Ramsay, K.C.B., will occupy the chair. Members of the club who intend to be present or to introduce guests are requested to give notice as early as possible to the honorary secretaries, Dr. James M. Dodds and Dr. C. O. Hawthorne, at 63, Harley-street, W. The annual general meeting of the club will be held at the same place and on the same date at 6.45 P.M.

THE opening lecture of the summer session of the North-East London Post-Graduate College will be given by Dr. H. D. Rolleston, physician to St. George's Hospital, on Thursday, May 11th, at 4.30 P.M., at the Tottenham Hospital, London, N., on High Arterial Tension, its Results and Prevention. The series of clinical lectures, of which this is the first for the present session, is free to all qualified medical practitioners.

THE eighth annual meeting of the Childhood Society will be held at 7, St. James's-square, London, S.W., on Wednesday, May 10th, when an address on Teaching "Commonsense" in the School of the Future will be delivered by Professor H. E. Armstrong, Ph.D., LL.D., F.R.S. The chair will be taken at 3 P.M. by the President, Earl Egerton of Tatton.

THE May dinner of the Aberdeen University Club, London, will be held at the Trocadéro Restaurant on Wednesday, May 17th, at 7.30 P.M. The Very Rev. John Marshall Lang, D.D., principal of the University of Aberdeen, will be in the chair. Members desiring to be present should communicate with Dr. R. J. Collie, honorary secretary, 25, Porchester-terrace, W., not later than May 13th.

THE discussion at the Epidemiological Society arising out of Dr. G. S. Buchanan's paper on the Spread of Small-pox occasioned by Small-pox Hospitals during 1900-04, which was read before the society on Friday last, will be continued to-night (Friday) by Dr. Arthur Newsholme at 11, Chandos-street, Cavendish-square, at 8.30 P.M.

THE annual dinner in connexion with the West London Hospital and Post-Graduate College will be held at the Trocadéro Restaurant on Wednesday, June 7th, at 7 o'clock, Dr. Seymour Taylor presiding. All information can be obtained from the Dean of the Post-Graduate College, Hammersmith, W.

THE Lord Mayor will preside at a public meeting at the Mansion House on May 17th, at 3 P.M. The meeting will be in support of an appeal for £10,000, which sum is urgently required by the National Association for the Prevention of Consumption and Other Forms of Tuberculosis.

AT the meeting of the Medical Society of London to be held on Monday, May 8th, there will be a discussion on the Perineal and Suprapubic Methods of Prostatectomy, to be opened by Mr. Reginald Harrison.

Professor Groedel of Nauheim requests us to contradict certain alarming reports which have been circulated as to the state of his health. We are happy to be informed that he is quite well.

THE Lord Mayor is announced to take the chair at a festival dinner to be held at the Trocadéro Restaurant in aid of the funds of the City of London Hospital for Diseases of the Chest, on Friday, May 26th.

THE next session of the General Council of Medical Education and Registration will begin on Tuesday, May 23rd, at 2 o'clock P.M.

MEDICINE, ITS PRACTICE AND ITS PUBLIC RELATIONS.

CHAPTER X.[1]

THE SANITARY SERVICE.

The Sanitary Service in England and Wales.—County and Borough Medical Officers.—The Medical Officer of Health in Private Practice.—Insecurity of Tenure.—Suggestions for Reform.—The Absence of a Sanitary Service in Ireland.—Security of Tenure in Scotland.

THE sanitary services in England (including Wales), Ireland, and Scotland are on entirely different bases and offer consequently different advantages counterbalanced by different drawbacks. Organisation has been carried to further lengths in England than in the other countries, because a large number of English populous centres are able to support an officer who gives his whole time to the care of the public health of the community. The great modern problems of overcrowding and of housing the poor have been more pressing in England than elsewhere and in consequence the necessity of the exclusive services of a sanitary expert has been more quickly recognised.

The Sanitary Service in England and Wales.

The position of the medical officer of health is well defined although anomalous. By the Public Health Act, 1875, every urban and rural sanitary authority in England is required to appoint a medical officer of health and an inspector of nuisances; but two or more districts may be combined by the Local Government Board to form a combined sanitary district, with one set of officers for the whole combination. The medical officer of health may be paid entirely by the community out of the rates or the help of the Local Government Board may be sought. If any part of the salary of a medical officer of health is paid by the county council on the certificate of the Local Government Board that Board exercises power of approval over the appointments, duties, and tenure of office of the officer, but it has to be noted that the duties of medical officers of health as prescribed by the Local Government Board are identical whether or not any contribution to salary is made out of county funds. County councils, under the Local Government Act, 1888, may appoint a county medical officer of health. These officers may either be required to give all their time to their appointments, which are generally well paid, though the remuneration is not too large when the responsibilities of the post are taken into account, or they may be engaged merely at a nominal fee to give advice when it is sought and to summarise the reports of the district medical officers of health. It is optional for county councils to make such appointments and at first sight we might expect the tendency to be against them. For it must be remembered that the large towns in England all have medical officers of health who, for the most part, are occupied solely with the sanitary needs of the towns, so that it is the countryside that is chiefly concerned in the appointment of a medical officer of health to assist the county councils in their deliberations. Now the country side is feeling the stress of hard times in England, competition and the rate of wages having put large tracts of land out of cultivation, and county councils might have been expected to avoid all possible charges upon the county rates. But county councils have proved themselves more awake to the value of having a county medical officer of health than might have been expected, and although progress is somewhat slow the majority of our counties are now provided either with a whole-time or a consultant medical officer of health. The economy of prevention is recognised, while the concentration of many minor appointments among rural districts into one well-paid appointment is much more feasible where the general superintendence of a county medical officer is forthcoming.

The medical officers of health to the different urban and rural sanitary constituencies of England may also be divided at once into two classes—those whose sanitary work occupies all their time and those who combine the duties of medical officer of health with those of a general practitioner. Nearly every large town of importance in England now possesses a medical officer of health whose duties as such form his only occupation and for the last 12 years it has been incumbent upon a candidate for these posts, where a city or district having at the last census 50,000 inhabitants is concerned, to possess either a diploma in public health or credentials pointing to special sanitary experience. The duties of the whole-time medical officer of health in a large town are onerous, responsible, and delicate and as a rule the salary is not a generous one, ranging from £500 to £1000 per annum though in a few important instances the salary is higher. But there is nevertheless strenuous competition for the posts, so that the public may be pardoned for thinking that a rather low scale of payment is counterbalanced by agreeable features in the appointments. And certainly the life of a medical officer of health in a large town, if he has the ear of the authorities, is a pleasant one. He has great power, if he will use it with tact and discretion, and enormous responsibility, and the stand-up struggle against disease that he is called upon to wage cannot fail to be exhilarating to the man with a medical soul. He is free from the worries and responsibilities of practice but in touch with the larger aspects of medicine. His work is very hard, and he does not receive that personal meed of gratitude that falls to the lot of private practitioners, but neither has he to submit to the whims of unreasonable individuals unless his authority should chance to be unfortunately constituted. But many urban and most rural sanitary constituencies in England cannot support a medical officer of health solely to discharge sanitary duties. The work might in some instances easily be found for him to do, but the community could not afford the salary. As a consequence in many rural districts the medical officer of health is a general practitioner who receives from the authorities a small salary to perform duties which, however light they may be as a rule, can at any moment become of overwhelming importance. The special difficulty of these appointments is that the public duties and private interests of the medical officer of health may clash, a situation in which no man should be placed. A certain sort of house-owner, for example, is known to resent bitterly the interference by the medical officer of health with his private property. If he is put to the expense of bringing his property into sanitary condition he will bear a grudge against the medical officer of health which in some cases he is able to gratify. Where the medical officer of health is not in private practice he can disregard such behaviour, but when his livelihood depends upon the good will of the neighbourhood it is difficult to sit down under slander. I may have put an extreme case, but it is well known that where the medical man is in private practice members of the public bring pressure to bear upon him in his official capacity.

The curious character of the appointments of the medical officer of health can hardly escape attention. He is the servant of what is in effect a form of partnership between the central authority, the Local Government Board, representing the whole country, and the sanitary authority representing local interests. He works under the Local Government Board without the sanction of which he cannot be appointed, save in the rare instances when the sanitary authority has not asked for any state subsidy, but he may be dismissed from office by the sanitary authority even when carrying out the recommendations of the Local Government Board. If any suggestion of the medical officer of health involves expenditure of money and his local masters, either from genuine economy—founded perhaps upon an innocence of hygienic knowledge—or from a desire to make a show of economy—to cover perhaps their own mistakes—do not think fit to spend the money the suggestion of the medical officer will be ignored, whatever the public consequences may be. Then if the medical officer continues to make inconvenient proposals so that pressure is brought to bear upon the authority by the Local Government Board the medical officer may fail to secure re-election. He is certain so to fail if his authority is much impressed with its own personal importance as well as behind the times in scientific knowledge. Here is a story in point, and many others could be supplied. A medical officer of health had held office in a rural district, population 16,000, for 16 years and had been re-elected every three years The district council passed a

[1] Chapters I., II., III., IV., V., VI., VII., VIII., and IX. were published in THE LANCET of Feb. 18th (p. 447), and 25th (p. 517), March 4th (p. 583), 18th (p. 736), and 25th (p. 817), April 1st (p. 877), 15th (p. 1017), 22nd (p. 1089), and 29th (p. 1151), 1905, respectively.

resolution requiring him to visit every case of infectious disease which was notified and to make a special detailed report thereon. In connexion with this resolution a communication was received by the district council from the Local Government Board pointing out that it was usually undesirable for the medical officer of health to make a personal diagnosis of infectious cases notified to him, and that in the instances where personal inspection might be needful the coöperation of the medical practitioner having charge of the patient should be sought. Having this definite expression of opinion in view the medical officer of health wrote to the district council, saying that he could not in future give the detailed reports required, whereupon the clerk to the council was directed to write to him asking him to resign his office unless he carried out the "lawful orders" of the council. We could not want a clearer instance of the impossibility of serving two masters. Stories similar to this have been told many times in our columns or at meetings of medical societies, all showing that when the authorities are ignorant or corrupt or prejudiced a medical officer of health can only obtain fixity of tenure upon sufferance, and, alas, sufferance is usually granted as a recognition of inaction. This is a highly discreditable position of affairs and one that calls for immediate rectification.

It might seem that the only remedy is a general sanitary service where the officers, rendered independent by adequate payment and security of tenure, can have no temptation to do no other than their duty by the community. To the great credit of the medical profession it may be said that default from duty almost never occurs but the whole position wants changing. The medical officers of health in London are not appointed for any specified limit of time and are only removeable by the authority with the consent of the Local Government Board. Some such measure of security ought to be enjoyed by all medical officers of health—the absolute necessity for it is well shown by the treatment recently meted out by the district council to Dr. F. T. Bond of Gloucester,[2] but fixity of tenure for all medical officers of health must not be regarded as the one and complete answer for all the faults in the sanitary administration of the country. The aggregation of many separate sanitary areas into combined districts, with a development of administrative work on the part of the county medical officer, is the direction, probably, towards which reform will tend in England and Wales. This is not the same thing as a universal fixity of tenure in sanitary appointments for which, it seems to many observers, the country is not ripe.

Nor again is a panacea to be found for ills that certainly exist in the formation of combined districts under "whole-time" officers. The scheme may look well on paper but it would not necessarily work well. The distances such an officer would have to travel are great, allowances for expenses would lead to endless trouble, and an outbreak of infectious disease in a distant part of his jurisdiction might mean a considerable sum (£50 or more) out of the pocket of the medical officer of health, as well as the enforced neglect of his other duties. The best system, at any rate at the present time, would probably be to continue "whole-time" medical officers of health in the large towns, but in small towns and rural districts to have local practitioners with district medical inspectors appointed by the Local Government Board. The local practitioner chosen for the post should be one taking an interest in sanitary affairs and for preference one who possesses a diploma in Public Health. If county medical officers, assisted by inspectors on the same lines as the existing Poor-law inspectors, would visit periodically the "half time" medical officer of health and occasionally attend meetings of the district councils, many distinct advantages would ensue. The inspector would be able to support the proposals of the medical officers of health and to indicate what conditions require to be remedied and in what way. The Local Government Board would thus come into closer touch with the sanitary administration of the country than it is at present. For now, unless there is some conspicuous outbreak of fever leading to a visit from one of the medical inspectors of the Board, the report of the medical officer of health is the only link between the district council and the Board. The Board has no other means of knowing whether the district councils are properly administering the Public Health Acts. Recently, the Local Government Board took the initiative in recommending to a sanitary authority in Wales that the medical officer of health should be appointed for an indefinite term instead of two years and the authority very properly fell in with the recommendation. This is apparently the tendency of the Board in all cases where the officer has a satisfactory record with the central authority. But some extended method is wanted by which the Local Government Board can become acquainted with the scientific and personal qualities of the medical officers of health. If the Board, being kept well informed by their medical inspectors and the county medical officers, would pursue this policy of instructing sanitary authorities how to treat the medical officer of health so as to secure his best work the sanitary service of England and Wales would be much improved, fixity of tenure would be insured to the men whom it is in everybody's best interests to keep in their offices, while inactivity would not secure re-election to a post.

[2] THE LANCET, April 29th, 1905, p. 1146.

The Sanitary Service in Ireland.

In Ireland the dispensary medical officer, in addition to all his other work, is the medical officer of health of the district. The Irish local board of guardians, which elects him as a medical officer, corresponds in certain of its functions to the urban and rural district councils of the English local government scheme, and the dispensary medical officer is the executive sanitary official. A recent report in the *British Medical Journal*[3] points out that the "Irish dispensary medical officer is practically two gentlemen rolled into one ..... and is *de facto* sanitary officer for the district" although he has under him a relieving officer. But the same report finds that in the smaller towns and in the rural districts the whole sanitary organisation of Ireland is a farce. And this is so. The dispensary medical officers are hopelessly underpaid and overworked. It is quite impossible for many of them to perform adequately the part of their duties that is represented by attending at the dispensaries and making visits at the patients' houses—and wretched houses some of them are. If the dispensary medical officers give up the whole of their time to their functions as Poor-law medical officers (and most of them do so) it is clear that they have no time to attend to their private patients. And yet, unless they can get private practice and supplement their salaries by certain little subsidiary appointments, they cannot make a livelihood. How are men, worked in this manner to the limit of their power for the lowest wage, to find time to take sanitary charge of great areas for the most part inhabited by a poor and ill-educated population? The need in Ireland is very great of county medical officers of health, properly salaried and debarred from medical practice, who might travel from place to place, inaugurate a scheme for general sanitary improvement, and see it carried through. The present sanitary system of Ireland outside the great towns cannot be described. It does not exist.

The Sanitary Service in Scotland.

The Scottish system of sanitary service is the best in the United Kingdom but it requires a little explanation for its exact understanding.

In Scotland, all medical officers of health, by whatever local authority appointed, have security of tenure under Section 54 (4) of the Local Government (Scotland) Act, 1889, which is as follows: "Every medical officer and every sanitary inspector appointed under this Act or under the Public Health Acts shall be removeable from office only with the sanction of the Board of Supervision." (The "Board of Supervision" was the precursor of the Local Government Board.) Every burgh and every county council appoints its own medical officer of health. The medical officers appointed by the burghs act only within the burghs. Those appointed by the county council have charge of all the rest of the county—that is, practically, all the rural districts, though in some lowland counties there are a number of populous places that are not burghs, and the county medical officers have charge of these. Under the Public Health (Scotland) Act, 1897 (Section 15), it is essential for every medical officer of health appointed since the Act came into force to be registered "as the holder of a diploma in sanitary science, public health, or State medicine." This provision is not retrospective but in many small burghs there is no medical man with a qualification in public health and

[3] The Duties of Dispensary Medical Officers. Supplement to the Brit. Med. Jour., March 26th, 1904.

when the medical officer of such a burgh dies or resigns the result not infrequently is that the county medical officer is appointed, so that the influence and sphere of work of the professed sanitarian tend to increase.

The duties of a county medical officer are not the same in Scotland as in England. In Scotland he is the executive and administrative officer. He is so not because he is county medical officer, but because every county medical officer is also medical officer for the districts under the charge of the district committees of the county councils. These district committees themselves are the local authorities under the Public Health Act, and when a man is appointed county medical officer he is also appointed medical officer for the districts of the county, these districts not including the burghs. Each district committee consists of the members of the county council resident in that district and also of a representative from each parish council in the district. The police burghs have representatives on the county councils, and also therefore on the district committees, but they do not act in public health matters as the burghs are not rated for public health by the county council, each burgh having charge of its own public health. As already stated, however, the county and district medical officer may hold burghal appointments also, but the custom is that the larger burghs have their own medical officers.

It is compulsory on every county to have a medical officer of health and the appointments are permanent in the sense already explained. Nearly all the county medical officers are "whole time" men. In the largest burghs also the medical officers are not in general practice, but several of them hold other appointments more or less related to public health. In the smaller burghs the medical officers are usually engaged in private practice unless it should occur that the county medical officer holds the appointment. This is a position which tends to occur more frequently and is of good omen, as it implies a general improvement in salary, for the range of salaries in Scotland is not so good as it is in England, although it is improving. The Poor-law medical officers, as such, have no sanitary duties in Scotland (excepting vaccination of defaulters), and have no security of tenure, but attempts are being made to obtain this by legislation. Their position at present is in this respect a very unfortunate one. The areas controlled by the district committees of the Scottish county councils are in most cases sufficiently large to prevent local influences having sway, especially as the medical officers are not engaged in private practice and have security of tenure over fixed areas. The smaller burghs are the worst off on the whole because their areas are limited and local influences consequently have more weight. Their medical officers have of necessity only small salaries, so that a mere fraction of their income represents their public work and their private practice is of supreme consequence to them. Everything that has already been said about the undertaking by English medical officers of health in rural districts of both public and private duties can be said concerning the Scottish medical officer of health when doubly employed, but the northerners have the best of the situation. They cannot be dismissed excepting with the approval of the Local Government Board. That Board has control of the distribution of a Government grant towards the salaries of medical officers of health and sanitary inspectors. It has power to refuse the grant if local arrangements are unsatisfactory. At present the grant, which is a fixed sum of £15,000 per annum, contributes about 7*s.* 6*d.* per £ to salaries and travelling expenses. The salaries for whole time medical officers range from about £350 or £400 to about £850, exclusive of travelling expenses and other outlays.

It will be seen that the sanitary services in the three countries have certain points in common. Where the countryside is sparsely populated and the districts are poor no funds for the payment of a medical officer of health are available. It is true that such districts escape risks which have to be taken by more crowded communities but it is none the less dangerous that they should be left without proper sanitary inspection and control. In Ireland this ineffectiveness of the sanitary administration is only part of the deplorable condition of the dispensary medical service and the remedies to be taken for the abuses are the remedies which should be applied to the reform of that service, which will be suggested in dealing with the administration of the Poor-law in the three countries. In England we have a much more crowded country with a much higher general standard of wealth. There is no reason, in theory, why England should not have a capable and fearless sanitary administration, but in practice the law is against it. In which attitude the law is also against much public and official opinion. When Sir Walter Foster was Parliamentary Secretary to the Local Government Board, now nine years ago, he spoke as follows to a deputation that had represented to him the inconvenience of placing the medical officer of health in a position where he is at the mercy of ignorant caprice:—

> The Board has arrived at a rather important decision—viz., that we consider these appointments for short periods and precarious tenure injurious to the public health. We are at one with you that men holding appointments for very limited periods cannot be expected to discharge their duties in that fearless and thorough manner which those duties require for the safety of the public, and we are anxious to encourage local authorities to give up the system of short appointments. We recognise that these offices are very delicate and difficult, as well as exceedingly responsible, and while a man is elected from year to year by a sanitary authority who may be offended by his zeal for the public health, we feel he cannot discharge his duties in the way they ought to be discharged. We have, therefore, arrived at the decision that we shall encourage local authorities all over the country to make these appointments for longer periods and, if possible, permanent appointments.

These be brave words, but as yet they remain largely words. The Local Government Board has done something towards their fulfilment and is still doing something; but reform comes very slowly. Fixity of tenure is more likely to follow upon the general appointment of county medical officers than upon the recommendation of the Local Government Board to certain authorities that certain individual medical officers of health should not have a term set to their period of office.

(To be continued.)

ERRATUM.—It has been pointed out to me that certain errors of detail have been committed in my description of the conditions under which naval medical officers discharge their duties. I have not given sufficient credit to the department for the reforms effected in the warrant of 1903. The cost of the post-graduate course, which is now required of every medical officer, is in the first instance defrayed by the officer, as I said, but the £25 is repaid to him by the Admiralty immediately he produces the necessary certificates of attendance. The comparison of charge pay in the navy with charge pay in the army cannot be made as I made it, as charge pay is given to deputy-inspector-generals, fleet-surgeons, and staff-surgeons, as well as to inspector-generals. The rate of payment is in correspondence with the rank of the officer, being 10*s.* per diem for an inspector-general, 7*s.* 6*d.* for a deputy-inspector-general, 5*s.* for a fleet-surgeon, and 2*s.* 6*d.* for a staff-surgeon. Charge pay is received in addition to "hospital allowance" by officers in charge of hospitals. All naval medical officers who are in hospitals, dockyards, marine infirmaries, or at the Admiralty receive "hospital allowance," and any officer not in official quarters receives "house allowance" in addition, but the charge pay of those in charge of hospitals is not received *in lieu* of "hospital allowance" but *in addition to* "hospital allowance." I regret that I did not perceive the full extent of the reforms which have recently taken place in the Naval Medical Service, as I desired particularly to bring before the notice of the medical profession what a good career that of a naval medical officer now is. The Admiralty provides a modern and expensive scientific equipment for its medical officers, great pains have been taken to attract young men of promise in their profession, and I am certain that these pains will be rewarded.—THE WRITER OF THE ARTICLE.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

A COMITIA was held on April 27th, Sir R. DOUGLAS POWELL, Bart., K.C.V.O., the President, being in the chair.

The PRESIDENT announced that, in accordance with the resolution passed at the last Comitia, he had nominated the following Fellows to serve on a committee appointed to consider the increasing mortality from plague:—Dr. J. F. Payne, Dr. Norman Moore, Sir Patrick Manson, Dr. John Anderson, Dr. W. J. R. Simpson, and Dr. W. B. Beatson. He also stated that he had nominated Sir Dyce Duckworth to represent the College at the International Congress of Medicine to be held at Lisbon in April, 1906.

The PRESIDENT drew attention to the fact that Sir William S. Church, as President of the College, had been a member of, and chairman of, the Cancer Research Committee and in retiring from the position of President thereby was no longer a member of that committee. It was therefore resolved to request Sir William Church to continue a member of the Cancer Research Committee.

Sir WILLIAM CHURCH thanked the College for the resolution and acceded to the wishes of the Fellows.

The report of the Committee on the Care and Control of the Feeble-Minded was received and adopted.

The following gentlemen having passed the required examination were admitted as Members of the College: Arthur John Jex-Blake, M.A., M.B. Oxon.; Frank Edward Taylor, M.A. Vict., M.B. Lond., L.R.C.P.; George William Watson, M.D. Lond., L.R.C.P.; and William Henry Wynn, M.D. Lond., L.R.C.P.

The following Members were elected as Fellows of the College: Duncan Burgess, M.B. Cantab.; Thomas Watts Eden, M.D. Edin.; Wilfred John Harris, M.D. Cantab.; Bedford Pierce, M.D. Lond.; Leonard Rogers, M.D. Lond., I.M.S.; James William Russell, M.D. Cantab.; James Harry Sequeira, M.D. Lond.; Harold Batty Shaw, M.D. Lond.; Edmund Ivens Spriggs, M.D. Lond.; William Barnett Warrington, M.D. Lond.; Arthur Whitfield, M.D. Lond.; and Robert Arthur Young, M.D. Lond.

The following communications were received: 1. From the secretary of the Royal College of Surgeons of England, reporting certain proceedings of the Council on April 13th. 2. From the executors of the late Mrs. Begley, announcing a bequest of £500 to the College.

Dr. P. H. Pye-Smith was re-elected the representative of the College on the Senate of the University of London.

On the recommendation of the Council the Baly medal was awarded to Professor Pavlov of St. Petersburg, as having pre-eminently distinguished himself in the science of physiology.

The quarterly report, dated April 7th, of the College finance committee was received and adopted.

A report, dated Feb. 6th, was received from the committee of management. Amongst other matters it was recommended that the Swansea General and Eye Hospital should be added to the list of general hospitals recognised by the Examining Board in England and that the Willesden District Isolation Hospital should be added to the list of fever hospitals recognised by the Examining Board in England.

A report, dated Jan. 27th, was received from the laboratories committee.

A report was received from Dr. Pye-Smith on the history and the work of the laboratories of the Royal Colleges since their opening in January, 1890. A vote of thanks was accorded to Dr. Pye-Smith for the report.

A report was received from Sir William Church and Sir Lauder Brunton on the conference of the Royal Sanitary Institute on School Hygiene, held from Feb. 7th to 10th, 1905.

Dr. NORMAN MOORE proposed the following motion:—

That a generous offer of the Worshipful Company of Barbers, conveyed in a letter to one of the Censors, to restore to the College an Inspeximus Charter of Charles II., now in possession of the Company, be accepted.

This was seconded by the SECOND CENSOR (Dr. W. H. ALLCHIN) and carried. Dr. Norman Moore was requested to receive the charter.

A list of books and other publications presented to the library during the past quarter was received and thanks were returned to the donors.

The PRESIDENT then dissolved the Comitia.

EGYPT IN 1904.

THE Earl of Cromer's report on the Finances, Administration, and the Condition of Egypt and the Soudan in 1904 is a lengthy document covering about 150 pages of foolscap size but the contents, generally speaking, are full of interest and many subjects are dealt with that appeal specially to the sanitarian. The Nile flood of 1904 was but little better than that of 1902, which was the lowest but one of those recorded, but notwithstanding this serious drawback, which a few years ago would have entailed great scarcity, if not actually a famine, Lord Cromer is able in his concluding paragraphs to state that the past year was one of unexampled prosperity in Egypt in spite of the ravages of the cattle plague and the fact that the cotton crop was a partial failure. Elsewhere he writes that the situation was saved by the works constructed during recent years and by the zeal and ability of the irrigation staff; and he further expresses the opinion that the whole population of Egypt owe a deep debt of gratitude both to these officials and to their predecessors.

The revenue of Egypt in 1904 amounted to £E.13,906,152, being no less than £E.2,406,152 in excess of the estimate. As, however, the expenditure was also largely in excess of previsions the actual surplus only amounted to £E.1,205,820. For the current year the estimated revenue is £E.12,255,000 and the estimated expenditure £E.11,755,000, the anticipated surplus consequently amounting to £E.500,000, a sum which we believe to be by far the largest that has ever appeared under this heading. Lord Cromer considers it to be highly satisfactory that whilst maintaining the policy of slow progress and low taxation it has been found possible to increase the administrative expenditure by no less, in round figures, than £E.630,000. Of this sum the lion's share is absorbed by the public works department, less than a tenth of the whole being distributed between the police, the prisons, and the sanitary services. "I am prepared to admit," continues Lord Cromer, "that it might have been possible, without serious risk of disturbing financial equilibrium, to go somewhat further in the direction of either reducing taxation or of increasing expenditure. But I repeat that, after full consideration, it was thought wiser to move tentatively and cautiously in the inauguration of the new system and to contemplate the possibility that either by reason of a heavy fall in the price of cotton or from other causes the rapidly growing prosperity of the country might receive a check." Under the "new system" of financial control which has become possible since the signature of the Anglo-French Agreement in April, 1904, the assets of the General Reserve Fund on Jan. 1st last amounted to £E.13,376,146. Of this large sum £E.7,529,074 have been hypothecated in various ways, but there still remains a balance of £E.5,847,072 which is available for capital expenditure of various sorts, whether in Egypt or the Soudan. The fund, also, will be replenished by the surplus of 1905 and also by about £E.3,000,000 from the liquidation of the Daira estates.

Under these flourishing financial conditions it is to be regretted that the question of town sewerage should have been allowed to fall into abeyance. Throughout his long report Lord Cromer makes no mention whatever of drainage, although he admits that only the fringe of the great question of sanitation has yet been touched in Egypt. In 1890 he wrote that the only way to remedy this evil was to construct a system of sewers on scientific principles. An eminent English engineer, Mr. Baldwin Latham, had been specially deputed some little time previously to report fully on this subject. The plan which he framed, and which Lord Cromer approved of, would have cost about £700,000. In his book "England in Egypt" Viscount Milner also alluded to this project, saying that the revival of interest in sanitary matters was further proved by the preparation then being made for the thorough drainage of Cairo. It is difficult to understand the complete shelving of this important matter, for in 1898, under the heading "Drainage of Cairo," Lord Cromer wrote: "This subject has been under consideration since 1890 but owing to financial and other reasons no solution has so far been found. The Cairo Water Company has now in hand a scheme which is almost ready to be submitted to the Government. The approximate total cost is £E.750,000. ..... It is to be hoped that at no very distant date it will be possible to commence work. I may mention that in 1891 the Powers agreed to the administrative expenditure of the Egyptian Government being increased by half the Octroi receipts of Cairo, in order to provide for the drainage of the town. The financial difficulties of carrying out any scheme are thus materially lessened." That sewerage is urgently required not only in Cairo and Alexandria but also in the large towns of Upper Egypt (where the Nile receives most of the filth) as well as in those of the Delta cannot be seriously contested. The number of towns which are provided with an abundant water-supply is being steadily added to, but in no case are there channels for its removal when soiled. Closets and sinks discharge

into loose-bottomed cess-pits underneath the houses and every day the subsoil necessarily becomes fouler and more suitable to act as a breeding-place for noxious germs.

In spite of the magnificent climate the death-rate in Egyptian towns is very high. The average in 20 towns with an aggregate population of 1,436,989 (natives) was 32·7 per 1000 for the week ending Dec. 16th, 1904, and for the preceding week it was 33·2 per 1000. Lord Cromer quotes Sir Horace Pinching under the heading "Infant Mortality" as follows: "The mortality in Cairo was considerably higher than in 1903. The increase was almost entirely due to a heavy mortality caused by gastro-enteritis among children during the months of April, May, and June and to a severe epidemic of measles from which 750 children died. The gastric troubles to which so many infants succumb in this country are without doubt due to bad feeding. Children of under a year old are given unripe fruit and vegetables of all kinds to eat. The high mortality which occurs from measles is due to the absolute want of any care or attention to children when suffering from this disease." No doubt Sir H. Pinching's view is correct to a certain extent but it should be remembered that it is during the three months which he mentions that the Nile is lowest and most foul. If Egypt were properly sewered an immense purification of the Nile could not but follow. The river is the sole source of water-supply that the country possesses and every effort ought to be made to keep it wholesome.

THE GERMAN CONGRESS OF INTERNAL MEDICINE.[1]

THE German Congress of Internal Medicine met this year at Wiesbaden from April 12th to 15th, Professor ERB (Heidelberg) being in the chair.

After the inaugural address, delivered by the PRESIDENT, the first subject brought before the Congress was a discussion on

Heredity.

Professor ZIEGLER (Jena) explained the biological process involved. Heredity, he said, depended on the spermatic cells and those of the ovule, which were very similar in animals and in plants; their nucleus included so-called chromosomes—i.e., stainable formations of distinct number and shape produced by the division of the nucleus. They were of the greatest importance for heredity. As the spermatic cell and that of the ovule contained the same number of chromosomes the influence of the mother and of the father was of equal importance in heredity. The impregnated ovule cell received one-half of its chromosome from the father and the other half from the mother and the mixture of the paternal and the maternal chromosomes had a great influence on the qualities transmitted by them to the young individual. The action of this combination (amphimixis) might be best observed when two different species of animals were mated. Professor Ziegler then explained that the germinative cells might differ according to the preponderance of the maternal or paternal chromosomes. In the procreation of new individuals different combinations might act each time and so the offspring of the same parents might exhibit differences. Professor Ziegler, in concluding his address, said that the constitution of an individual and the liability to diseases depended on heredity according to natural laws.

Heredity and Predisposition with Regard to Tuberculosis.

Professor MARTIUS (Rostock) said that in an individual case the question of hereditary conveyance of pathological or normal psychical or bodily qualities could only be judged according to the laws of probabilities. The practical results of theoretical research were not very great; in contracting a marriage it must be considered in the first place whether the constitution of both partners was good. Secondly, when specific diseases had been prevalent in the ancestry of one partner it was desirable that they should be absent in the ancestry of the other. The hereditary nature of certain diseases, however, was not only manifest by their prevalence in the ancestors; as these diseases could not be explained by exogenic influence a specific predisposition must be admitted. Some diseases could only be understood by supposing a specific hereditary debility of the organ. Professor Martius concluded that diseases proceeding from exogenic causes might be combated and that intra-uterine infection and direct toxic lesion of the germs (as by syphilis and alcohol) must be avoided. The better the constitution of the parents the greater was the probability of healthy offspring.

"Thorax Paralyticus."

Dr. ROTHSCHILD (Soden) said that he distinguished between the congenital and the acquired forms of this condition and he opposed the view that thorax paralyticus was the consequence of pulmonary tuberculosis. It was present not only in children of tuberculous parents but also in those who lived under bad hygienic conditions. He then described the anatomical symptoms of this form of thorax, the flatness of the anterior thoracic wall being the most characteristic feature.

In the discussion Dr. JESSEN denied the existence of congenital thorax paralyticus.

Dr. HANSEMANN supported the views of Professor Freund—namely, that the stenosis of the upper aperture of the thorax depended on a congenital shortness of the cartilage of the first rib. He said that thorax paralyticus and the general state of nutrition were inherited.

Dr. AUFRECHT (Magdeburg) said that pulmonary tuberculosis was not transmissible by heredity, but he conceded the heredity of scrofulosis which made children more liable to be invaded by tubercle bacilli.

Dr. TURBAN (Davos) made the interesting statement that in certain tuberculous families the phthisical process had a tendency to begin in every member in the apex of the right lung and in other families in that of the left lung.

Dr. LÜTHJE said that dogs of the same family when bred in and in presented certain anomalies of metabolism, such as increase of the discharge of uric acid, polyuria, obesity, &c.

Dr. STÄUBLI (Munich) gave an account of his experiments in guinea-pigs concerning the quantity of agglutinin in the blood of fœtuses the progeny of animals treated with enteric fever bacilli. He said (1) that a fœtus having a father with and a mother without agglutinating blood did not show agglutinin in its blood; (2) that the offspring of mothers whose blood contained agglutinin had also agglutining substance in their blood serum; and (3) that their fœtuses were like animals of passive immunity—i.e., those in which the agglutinating serum had not formed spontaneously but had been injected. He drew the conclusion that the agglutinating substance was conveyed through the placenta to the fœtus but that the capacity to form agglutinin was not hereditary.

Physiology and Pathology of the Blood.

Professor LEUBE (Würzburg) spoke on the subject of the pulse in the veins of anæmic patients. According to him this venous pulse was produced by a relative insufficiency of the tricuspid valve.

Dr. HERING (Prague) reported an experiment where the heart was made to resume beating 11 hours after death by injection of Ringer's fluid into the coronary arteries. The heart beat three and a half hours and it was remarkable that both the auricles beat separately from the ventricles and more often than the latter.

Dr. DENEKE (Hamburg) reported that he had made a similar observation in the heart of a decapitated criminal.

Dr. SCHOTT (Nauheim) said that it was a clinical observation that both the ventricles and the auricles beat synchronously.

Alteration of the Arteries produced by Injections of Adrenalin.

Dr. FISCHER (Bonn) said that intravenous injections of adrenalin in animals produced aortic aneurysm by causing necrosis of the muscularis and degeneration of the elastic fibres. An inflammatory reaction leading to typical mesarteritis and endarteritis was the result. The arch and the thoracic part of the aorta were liable to be affected first. Dilatation and hypertrophy of the heart occurred almost always, myofibrosis and myocarditis occurred frequently, and sclerosis of the heart muscle sometimes. Cerebral hæmorrhages of greater or less extent were frequent, especially in the cortex. The same alteration of the arteries, though not so marked or so regular, might be produced by the intravenous injection of other toxic substances. There was a difference between arteriosclerosis in the human subject and the above alteration, which might be termed arterionecrosis. Subcutaneous injections in guinea-pigs and intravenous injections in dogs were inefficacious, as different species of animals showed different reactions.

(To be continued.)

[1] For this report we wish to tender our sincere thanks to the editor of the *Deutsche Medicinische Wochenschrift*, through whose courtesy it has been forwarded to us by our Berlin correspondent.

Looking Back.

FROM

THE LANCET, *SATURDAY*, May 5, 1827.

According to Mr. Macnish, who seems to have instituted a set of convivial experiments to ascertain the point, the symptoms of drunkenness succeed each other in the following order:—

"First, an unusual serenity prevails over the mind, and the soul of the votary is filled with a placid satisfaction. By degrees he is sensible of a soft and not unmusical humming in his ears, at every pause of the conversation. He seems, to himself, to wear his head lighter than usual upon his shoulders. Then a species of obscurity, thinner than the finest mist, passes before his eyes, and makes him see objects rather indistinctly. The lights begin to dance, and appear double. A gaiety and warmth are felt at the same time about the heart. The imagination is expanded, and filled with a thousand delightful images. He becomes loquacious, and pours forth, in enthusiastic language, the thoughts which are born, as it were, within him.

"Now comes a spirit of universal contentment with himself and all the world. He thinks no more of misery: it is dissolved in the bliss of the moment. This is the acme of the fit—the ecstacy is now perfect. As yet the sensorium is in tolerable order: it is only shaken, but the capability of thinking with accuracy still remains. About this time, the drunkard pours out all the secrets of his soul. His qualities, good or bad, come forth without reserve; and now, if at any time, the human heart may be seen into. In a short period, he is seized with a most inordinate propensity to talk nonsense, though he is perfectly conscious of doing so. He also commits many foolish things, knowing them to be foolish. The power of volition, that faculty which keeps the will subordinate to the judgment, seems totally weakened. The most delightful time seems to be that immediately before becoming very talkative. When this takes place, a man turns ridiculous, and his mirth, though more boisterous, is not so exquisite. At first, the intoxication partakes of sentiment, but, latterly, it becomes merely animal.

"After this the scene thickens. The drunkard's imagination gets disordered with the most grotesque conceptions. Instead of moderating his drink, he pours it down more rapidly than ever: glass follows glass with reckless energy. His head becomes perfectly giddy. The candles burn blue, or green, or yellow; and where there are perhaps only three on the table, he sees a dozen. According to his temperament, he is amorous, or musical, or quarrelsome.—Many possess a most extraordinary wit; and a great flow of spirits is a general attendant. In the latter stages, the speech is thick, and the use of the tongue in a great measure lost. His mouth is half open, and idiotic in the expression; while his eyes are glazed, wavering, and watery. He is apt to fancy that he has offended some one of the company, and is ridiculously profuse with his apologies. Frequently he mistakes one person for another, and imagines that some of those before him are individuals who are, in reality, absent or even dead. The muscular powers are, all along, much affected: this, indeed, happens before any great change takes place in the mind, and goes on progressively increasing. He can no longer walk with steadiness, but totters from side to side. The limbs become powerless, and inadequate to sustain his weight. He is, however, not always sensible of any deficiency in this respect: and, while exciting mirth by his eccentric motions, imagines that he walks with the most perfect steadiness. In attempting to run, he conceives that he passes over the ground with astonishing rapidity. The last stage of drunkenness is total insensibility. The man tumbles perhaps beneath the table, and is carried away in a state of stupor to his couch. In this condition he is said to be *dead drunk*.

"When the drunkard is put to bed, let us suppose that his faculties are not totally absorbed in apoplectic stupor; let us suppose that he still possesses consciousness and feeling, though these are both disordered; then begins the "tug of war;" then comes the misery which is doomed to succeed his previous raptures. No sooner is his head laid upon the pillow than it is seized with the strangest throbbing. His heart beats quick and hard against the ribs. A noise like the distant fall of a cascade, or rushing of a river, is heard in his ears.—Sough—sough—sough, goes the sound. His senses now become more drowned and stupified. A dim recollection of his carousals, like a shadowy and indistinct dream, passes before the mind. He still hears, as in echo, the cries and laughter of his companions. Wild fantastic fancies accumulate thickly around the brain. His giddiness is greater than ever; and he feels as if in a ship tossed upon a heaving sea. At last, he drops insensibly into a profound slumber."

We cannot speak of the latter act of the comedy—the being put to bed—the sough, sough, sough-going sound, &c., from any experience of our own; but we confess that we recognise, in the earlier scenes, some of our youthful sensations. But we apprehend these sensations must vary considerably with the liquor drunk, with its quality, and with the temperaments of the individuals composing the social party.[1]

VISIT OF BRITISH PHYSICIANS AND SURGEONS TO PARIS.

IN connexion with the forthcoming visit of British physicians and surgeons to Paris the following programme has been received from the honorary secretary of the Paris committee by Dr. Dawson Williams and Dr. W. Jobson Horne, the honorary secretaries of the London executive committee.

Wednesday, 9 P.M.: Reception at the Sorbonne, Rue des Écoles des Médecine, by the rector of the University, M. Casimir Perier, and Professor Bouchard; evening dress, black tie; ladies accompanying members will be invited to attend this reception (demi-toilette). A registration and information office will be open at the Sorbonne on this occasion and every member of the party is particularly requested (1) to register his address in Paris; (2) to obtain the full programme and other documents prepared for his information which will then be distributed; and (3) to inscribe his name on forms which will be provided for the purpose under the particular hospitals or services which he wishes to visit on the mornings of Thursday, Friday, and Saturday.

The Paris committee will provide an inquiry office on Thursday, Friday, and Saturday, May 11th, 12th, and 13th, at the Grand Hotel, Place de l'Opéra. Members of the party unable to reach Paris in time to attend the reception are advised to register their names at this office immediately after their arrival, and also, if possible, to send beforehand their addresses to Dr. Triboulet, 25, Avenue d'Antin, Paris.

With regard to special visits, all the members of the party and the ladies by whom they are accompanied are invited to attend the following:—

Thursday.—3 P.M.: Reception at the École de Médecine (Rue de l'École de Médecine); inspection of the theatres, laboratories, museum, and library. 4.45 P.M.: Reception at the Hôtel de Ville by Dr. Brousse, President, and the members of the municipal council of Paris. Address by Dr. Brousse; music; refreshments. 10 P.M.: Soirée given by Professor Bouchard.

Friday.—2.40 P.M.: Gare du Nord; special train to Chantilly, returning to Paris about 6 P.M. 9 P.M.: Private theatrical entertainment at the Automobile Club, 6, Place de la Concorde (evening dress; orders). Cards of invitation, if not previously received, must be obtained at the reception at the Sorbonne on Wednesday evening.

Saturday.—3.45 P.M.: Reception at the Institut Pasteur, Rue Dutot, by M. Roux, directeur, and Madame Pasteur; inspection of the laboratories. 8 P.M.: Banquet at the Grand Hotel, given by the Paris committee to gentlemen (only) of the party. Invitations will be issued to members at their addresses in Paris.

If any member of the party has not yet notified one of the honorary secretaries in London—Dr. Dawson Williams, 2, Agar-street, Strand, W.C., or Dr. Jobson Horne, 27, New Cavendish-street, W.—that he requires railway vouchers or wishes to join the excursion to Vichy-Evian or Béarn, he is asked to do so without further delay. The failure of so many members of the British party to respond to the inquiries in the circular addressed to them two or three weeks ago is

[1] Excerpt from review of *The Anatomy of Drunkenness*. By ROBERT MACNISH, Member of the Glasgow Medical Society. 8vo. pp. 56. Glasgow, 1827. W. R. MacPhun.

causing great embarrassment to those who so generously propose to entertain parties at Vichy and Evian and at the watering-places of Béarn. It is therefore particularly requested that the slip as to the excursions may be filled up and returned at once. Our readers may be reminded that it will be possible to return direct from Vichy to Paris on Monday, May 15th.

Among the demonstrations and lectures to be given will be one in English by Dr. H. Mendel on Intra-tracheal Injections. The demonstration will be given in the St. Charles Salon of the Hôtel Dieu on Friday, May 12th, at 10 A.M. Dr. Mendel will demonstrate his own method of giving intra-tracheal injections, the chief point of which is that he uses non-irritating substances so that no reflex cough is produced. Dr. J. Rivière will be pleased to receive any of his British colleagues and to show them the Establishment of Physicotherapy at 25, Rue des Mathurins (Opéra) during the visit from 10 A.M. to midday and from 2 to 6 P.M., except on the afternoon of Friday, May 12th.

MEDICINE AND THE LAW.

The Scope of Scientific Testimony.

Dr. Solomon Solis Cohen, professor of clinical medicine in the Jefferson Medical College, in an address delivered before the Philadelphia College of Pharmacy and published in the *American Journal of Pharmacy* for January, has recently discussed the scope of so called expert evidence in trials from the ethical point of view. The correct attitude of an expert witness is well summed up by Dr. Cohen in the following passage: "As a witness he is bound by his oath and by his duty to the court and to the State to endeavour to assist judge and jury to reach correct conclusions without reference to the effect of those conclusions upon the verdict to be rendered. He is to distort nothing, magnify nothing, minimise nothing; assert as positive nothing doubtful, throw doubt upon nothing certain; introduce nothing irrelevant, suppress nothing material; give utterance to no statement of fact, advance no theory that he would shrink from defending before a learned society." Dr. Cohen proceeded to enumerate the many difficulties that a scientific witness meets with in the courts and laid stress on the necessity of avoiding the position of partisan, whether from a personal though disinterested desire for the success of one side or from the pertinacity of advocates or from a mistaken notion that the acceptance of a fee by a scientific witness puts him under an obligation to strain the evidence as far as possible in favour of his own side. Any such false position can be avoided by making certain stipulations when called upon to consider the facts in a given case. The suggested stipulations are: (1) that there is no obligation for the expert to testify or to give counsel involved in his acceptance of a fee to examine papers or otherwise look into the facts; (2) that the nature of the testimony to be given, in case the preliminary examination permits an agreement to testify at all, is subject to modification by the subsequent disclosure of new facts at the trial or otherwise and that the attorney must then decide for himself whether or not to call the expert as a witness; (3) that he is to be asked only simple and direct questions permitting the framing of answers that will bring out the whole truth as one sees it and not merely fragments of the truth; (4) that he is not expected to be positive upon uncertain matters or to throw doubt upon those that are not doubtful; and (5) that he is not to be asked questions to which correct answers must be highly technical simply for the purpose of obscuring the issue. By taking such a course of action scientific witnesses would avoid being placed, even apparently, in the position of partisans or scientific advocates. The function of a scientific witness is to enlighten the judge and the jury as to the significance of certain facts and relations beyond the ordinary knowledge but of which he has made a special study. His testimony must be based in part upon his reading and in part upon his observations. Expert witnesses upon pharmacological questions are called upon to give four different orders of testimony not usually discriminated. They are all treated as matters of opinion but in reality three relate to matters of fact and may be distinguished as follows. 1. Personal observations on the part of the witness as to the effect of drugs on the human or the animal body. 2. The methods of chemical analysis and their results. That arsenic has or has not been found is a matter of fact and is to be criticised from that standpoint. If the methods pursued have been faulty, or if the results have been inconclusive, that can properly be shown, but also as matters of fact and not of opinion. It is perfectly proper to point out, for example, that in the attempted identification of poisons a careless observer may mistake antimony for arsenic, but it is misleading to attempt to make a jury believe that discrimination between antimony and arsenic is at all uncertain when the right tests have been made. 3. Matters of general scientific knowledge—e.g., as to the action of drugs or the contamination of foods, drugs, and manufactured articles of various kinds by poisons, or as to chemical and pharmaceutical incompatibilities—are also matters of fact, whether within or without the personal observation of the witness. Concerning matters, however, which are not only outside the observation of the witness but beyond the range of his usual studies he can only have an opinion. He cannot know them as facts and he should refuse to testify concerning them. Again, in a case of suspected poisoning, a medical practitioner who has not seen the living person or the corpse can only be asked to express an opinion on facts described by others as to the nature of symptoms during life and as to the cause of death, for the facts are all beyond his knowledge. These views of Dr. Cohen are of interest to medical men who as a body are so often called upon to give evidence in the courts, evidence on which may hang the life or liberty of a fellow subject. It is impossible to magnify the importance of the difference between an opinion and a statement of fact in giving evidence. There is a certain amount of distrust of expert evidence which is due, no doubt, to a lack of appreciation of this difference by some expert witnesses as well as by the general public. But a professional man should not sink his dignity by accepting a fee to express an opinion in court without having satisfied himself that the facts submitted to him and examined by him warrant such opinion. As Dr. Cohen says: "Evidence should be given with a view to elucidate the truth and not to score points for or against either side."

A Mission Hall as a Common Lodging House.

Miss M. Barclay was fined £2 with £5 5*s.* costs by Mr. Chapman on April 26th for keeping a mission hall in Paradise-street, Rotherhithe, as a common lodging house. The facts had been gone into at a previous hearing but the case had not been decided owing to the appeal from a decision by another magistrate, Mr. Cluer, in a similar case not yet having been decided, and it had been understood that Miss Barclay would endeavour to prevent the circumstances constituting the alleged offence from recurring meanwhile. The defendant, a lady whose benevolent intentions are beyond dispute, urged in her own defence that the men admitted to the hall had nowhere to sleep and were tired; she also added that they were asked not to go to sleep and that there was no law to prevent men from going to sleep in a mission hall and that other gentlemen present in court no doubt sometimes fell asleep in church. This somewhat feminine line of argument did not prevail with Mr. Chapman, who pointed out to the defendant that he had to administer the law as it stood and that, in his opinion, she had brought herself within its provisions. He might have added that the law relating to common lodging houses exists for the benefit of the very class in whose physical welfare Miss Barclay is interested. In providing certain regulations for the sanitation of such places the law not only protects the community but increases the comfort as well as the safety of the individuals whose hard lot compels them to frequent the lodging house.

The Medical Man, the Coroner, and the Pathologist.

At an inquest held recently at Wandsworth, Mr. E. R. Badcock, medical officer to the local Poor-law authorities, gave evidence, the deceased having died after Mr. Badcock had ordered his admission to the infirmary but before he could be conveyed thither. In the course of his evidence Mr. Badcock protested against not having been afforded an opportunity of attending the post-mortem examination, which was made as usual by Dr. L. Freyberger. Mr. Troutbeck's reply to this complaint is thus reported in the *Daily Telegraph*: "It is quite useless of you making these silly protests. Continue your evidence." When the witness had stated his opinion as to the cause of death the coroner addressed him thus: "Why would you not certify as to

death? These were respectable people and you had the history of the case. I object very much to having these inquests forced upon me." If Mr. Troutbeck does not find that he enjoys the coöperation and the goodwill of the medical practitioners in his district he has only himself to thank; in any case, however, the medical man has to certify upon his own responsibility as to the cause of death, whether the deceased's relatives are respectable or not, and is perfectly right not to do so if his attendance upon the deceased has not been such as to enable him to certify with confidence. Mr. Badcock complained that he was not enabled to be present at the post-mortem examination in order that he might observe for himself whether such opinion as he had formed was justified. If, however, he had attended the deceased "at his death or during his last illness," he was the proper person not merely to be present at the post-mortem examination but actually to make it himself according to the 21st section of the Coroners Act, 1887. That he had so attended the deceased Mr. Troutbeck would, presumably, not dispute, after having expressed the opinion that he should have given a certificate as to the cause of death.

The Forensic Position of Deaf-mutes.

Dr. W. Wynn Westcott lately had a deaf-mute woman before him in his coroner's court who had overlaid her baby. The coroner's officer gave most of the evidence and the verdict was eventually returned of "Accidental death." The law recognises two varieties of muteness. A man upon arraignment may be "mute of malice," wilfully refusing to plead at all, or he may be mute not of malice but from "the visitation of God." Should occasion arise this latter condition, *et surdus et mutus a nativitate*, is a presumption in law of idiocy as coming under the heading *dementia naturalis*. Some difficulty arises when a deaf-mute witness has to be examined; he cannot hear the terms of the oath under which he is sworn and his testimony must be either written down by himself or transmitted through an interpreter, as was decided in a case tried in 1827. Formerly, previously to "the schoolmaster being abroad," illiterate deaf-mutes accused of malingering in court were subjected to great hardships; thus in 1734 John Durant was tortured with the thumb-screw in order to force him to plead, he was probably deaf and certainly illiterate. A legal decision affirmed that a deaf-mute might marry (1 K. & J. 4). In 1876 a deaf-mute was found guilty but unable to appreciate the forensic proceedings; he was therefore detained as a non-sane person during Her Majesty's pleasure. In 1900, at the Salisbury autumn assizes, a deaf-mute was allowed to plead in writing. At the Central Criminal Court in 1897 a man who had cut his own throat after committing a murder was upon arraignment only able to whisper "not," owing to the damaged state of his larynx; he subsequently received a capital sentence. In olden times, after being thrice warned, *prisone* or *peine fort et dure* was the lot of one suspected of inconvenient taciturnity, muteness of malice; the reason for the assumption of dumbness was not far to seek, for one who did not plead at all could not be convicted nor could his lands be forfeited; thus did men lose their lives to save their estates for their families.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 8434 births and 4954 deaths were registered during the week ending April 29th. The annual rate of mortality in these towns, which had been 15·7, 16·6, and 15·6 per 1000 in the three preceding weeks, rose again to 16·5 per 1000 last week. In London the death-rate was 15·9 per 1000, while it averaged 16·8 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 8·1 in Hornsey, 8·2 in King's Norton, 8·3 in Wallasey, 8·7 in Bournemouth, 8·9 in East Ham, and 9·6 in Northampton; while the highest rates were 22·1 in St. Helens, 22·8 in Stockport, 22·9 in Wigan, 24·2 in Sunderland, 25·4 in Merthyr Tydfil, 25·8 in Newport (Mon.), and 27·0 in Middlesbrough. The 4954 deaths in these towns last week included 460 which were referred to the principal infectious diseases, against 430, 553, and 453 in the three preceding weeks; of these 460 deaths, 203 resulted from measles, 122 from whooping-cough, 42 from diphtheria, 40 from diarrhœa, 32 from scarlet fever, 20 from "fever" (principally enteric), and one from small-pox. No death from any of these diseases was registered last week in Hornsey, Leyton, Bournemouth, Great Yarmouth, Norwich, Plymouth, Wolverhampton, Grimsby, Wallasey, Bootle, Bury, or Rochdale; while they caused the highest death-rates in West Bromwich, Coventry, St. Helens, Oldham, Sheffield, and Merthyr Tydfil. The greatest proportional mortality from measles occurred in West Bromwich, Coventry, St. Helens, Wigan, Warrington, Sheffield, Sunderland, Newport (Mon.), and Merthyr Tydfil; and from whooping-cough in Willesden, Tottenham, and West Ham. The mortality from each of the other principal infectious diseases showed no marked excess in any of the large towns. One fatal case of small-pox occurred in London, but none in any other of the 76 towns. The Metropolitan Asylums Hospitals contained 16 small-pox patients at the end of last week, against 21, 15, and 17 at the end of the three preceding weeks; four new cases were admitted during the week, against four, none, and six in the three preceding weeks. The number of scarlet fever cases remaining under treatment in these hospitals and in the London Fever Hospital, which had been 2086, 2133, and 2128 at the end of the three preceding weeks, had risen again to 2182 at the end of last week; 255 new cases were admitted during the week, against 292, 290, and 253 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory organs, which had been 308, 304, and 272 in the three preceding weeks, increased to 306 last week, and were 82 in excess of the number in the corresponding period of last year. The causes of 72, or 1·5 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Portsmouth, Bristol, Leeds, Newcastle-on-Tyne, Cardiff, and in 46 other smaller towns; while the largest proportions of uncertified deaths were registered in Reading, Norwich, Birmingham, Liverpool, St. Helens, Warrington, Sheffield, Sunderland, South Shields, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 16·6, 18·0, and 17·8 per 1000 in the three preceding weeks, rose again to 18·8 per 1000 during the week ending April 29th, and was 2·3 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 12·8 in Leith and 15·9 in Dundee to 20·8 in Greenock and 21·1 in Glasgow. The 632 deaths in these towns included 27 which were referred to whooping-cough, 21 to measles, eight to diarrhœa, and one each to scarlet fever, diphtheria, and enteric fever, but none to small-pox. In all, 59 deaths resulted from these principal infectious diseases last week, against 69 in each of the two preceding weeks. These 59 deaths were equal to an annual rate of 1·8 per 1000, which was 0·3 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of whooping-cough, which had been 28, 36, and 23 in the three preceding weeks, rose again last week to 27, of which 18 occurred in Glasgow, four in Paisley, two in Edinburgh, and two in Dundee. The deaths from measles, which had been 13, 17, and 23 in the three preceding weeks, declined to 21 last week, and included 15 in Glasgow and five in Edinburgh. The fatal cases of diarrhœa, which had been 20, nine, and 12 in the three preceding weeks, decreased again last week to eight, of which six were recorded in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 119, 121, and 126 in the three preceding weeks, declined again to 121 last week, and were equal to the number in the corresponding period of last year. The causes of 18, or nearly 3 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 25·5, 21·6, and 23·4 per 1000 in the three preceding weeks, declined again to 21·9 per 1000 during the week ending April 29th. During the past four weeks the death-rate has averaged 23·1 per 1000, the rates during the same period being 15·7 in London and 16·0 in Edinburgh. The 159 deaths of persons belonging to Dublin registered during the week under notice

were 11 below the number in the preceding week and included eight which were referred to the principal infectious diseases, against five, eight, and 12 in the three preceding weeks; of these, three resulted from diarrhœa, two from measles, two from "fever," and one from whooping-cough, but not any from small-pox, from scarlet fever, or from diphtheria. These eight deaths were equal to an annual rate of 1·1 per 1000, the death-rates last week from the principal infectious diseases being 1·5 in London and 1·4 in Edinburgh. The fatal cases of diarrhœa, which had been two, none, and three in the three preceding weeks, were again three last week. The deaths from measles, which had been four in each of the two preceding weeks, declined last week to two. The 159 deaths in Dublin last week included 23 of children under one year of age and 48 of persons aged 60 years and upwards; the deaths of infants showed a considerable decline, while those of elderly persons were equal to the number in the preceding week. Four inquest cases and three deaths from violence were recorded; and 63, or nearly two-fifths, of the deaths occurred in public institutions. The causes of ten, or more than 6 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: W. W. Pryn to the *Goliath*, R. H. Nicholson to Portsmouth Dockyard, J. H. Whelan to the *Canopus*, W. Bett to Greenwich Hospital School and R.N. College; and J. H. Acheson to the *Russell*. Staff Surgeons: H. W. Finlayson to the *St. George*; H. N. Stephens to the *Topaze;* and L. Kilroy to the *Wildfire*. Surgeons: S. Roach to the *Cambridge* and H. P. Turnbull to Haslar Hospital.

ARMY MEDICAL STAFF.

Surgeon-General Sir E. Townsend, K.C.B., C.M.G., is placed on retired pay (dated April 22nd, 1905). Colonel R. H. Quill, from the Royal Army Medical Corps, to be Surgeon-General, vice Sir E. Townsend, K.C.B., C.M.G. (dated April 22nd, 1905).

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel O. E. P. Lloyd, V.C., to be Colonel, vice R. H. Quill, promoted (dated April 22nd, 1905). Captain O. Challis resigns his commission (dated May 3rd, 1905).

Major J. C. Connor joins at Portsmouth. Captain J. M. Sloan, D.S.O., assumes the duties of Recruiting Medical Officer, Glasgow, during the absence on leave of Lieutenant-Colonel W. V. Lane from May 1st to June 30th. Captain A. H. O. Young takes over charge of staff and departments of the Belfast Garrison.

INDIAN MEDICAL SERVICE.

The King has approved of the following promotions among officers of the Indian Medical Service made by the Government of India:—Captains to be Majors (dated Jan. 30th, 1905): *Bengal Establishment:* Charles Milne, Vivian Godfrey Drake-Brockman, William Young, John Joseph Bourke, Bernard Robert Chatterton, Cedric Barkley Prall, Charles Edward Williams, John Norman MacLeod, Walter Holland Ogilvie, Thomas Alfred Ollivant Langston, Richard Heard, Edgar Rowe Parry, Walter Hood Orr, and Paxton St. Clair More. *Madras Establishment:* George Bidie. Lieutenants to be Captains (dated Jan. 29th, 1905): Alfred Ernest John Lister, Thomas Samuel Beauchamp Williams, Samuel Herbert Lee Abbott, Alexander William Greig, Richard Ernest Lloyd, John Edmund Clements, Hugh Barkley Steen, Ernest Bisset, Richard James Bradley, James Woods, Alexander William Overbeck-Wright, David Munro, Thomas William Harley, John William McCoy, Roger Lionel Hagger, Robert Markham Carter, Roger Durrant Willcocks, Thomas George Ferguson Paterson, Dodington George Richard Shurton Baker, Jasper Robert Joly Tyrrell, Dewan Ganpat Rai, Robert Macpherson Barron, William Reith John Scroggie, Lewis Patrick Farrell, Thomas Henry Gloster, Herbert Henry George Knapp, James Henry Horton, D.S.O., and William Adolphus Justice.

ROYAL ARMY MEDICAL CORPS (MILITIA).

Dublin District Company: Captain (Honorary Captain in the Army) J. Davies resigns his commission (dated April 1st, 1905).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): The Highland: Surgeon-Lieutenant G. Wilson to be Surgeon-Captain (dated April 22nd, 1905).

Royal Engineers (Volunteers): 1st London: Surgeon-Lieutenant E. C. Roberts to be Surgeon-Captain (dated March 28th, 1905).

Rifle: 4th (Hunts) Volunteer Battalion the Bedfordshire Regiment: Surgeon-Captain W. F. Fisher resigns his commission (dated April 22nd, 1905). 2nd (Angus) Volunteer Battalion the Black Watch (Royal Highlanders): Surgeon-Lieutenant-Colonel G. P. Alexander resigns his commission and is granted the honorary rank of Surgeon-Colonel, with permission to wear the prescribed uniform (dated April 22nd, 1905). 2nd Volunteer Battalion the Prince of Wales's (North Staffordshire Regiment): Surgeon-Lieutenant E. C. Stack to be Surgeon-Captain (dated April 22nd, 1905).

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Major R. T. C. Robertson to be Surgeon-Lieutenant-Colonel (dated April 11th, 1905).

ARMY REFORM.

From intimations which have appeared in the daily press it would appear that Mr. Arnold-Forster and the military members of the Army Council are not at one in regard to the new army scheme put forward by the War Minister. Notwithstanding the various explanations which have been given in the House of Commons regarding its object and character, but rather in consequence thereof, it cannot be said that anybody knows exactly "where we are" in this matter. It seems clear that Mr. Arnold-Forster has not succeeded in carrying conviction to the minds of all those whom he sought to convince that he has produced a sound, well-balanced, and workable scheme. It is certainly incomplete from a sanitary and medical point of view to meet all the requirements of war and whether the scheme as a whole will prove successful in attracting the requisite number and quality of recruits into the army and in providing a sufficient army reserve are points which have still to be settled by the tests of trial and experience.

THE FIELD AMBULANCE.

A description of the new unit, "The Field Ambulance" has recently been published by the War Office. It takes the place of the bearer company and the field hospital and is under the command of a lieutenant-colonel. The total *personnel* consists of 252 of all ranks; these are divided into (1) a bearer, (2) a tent, and (3) a transport division. The bearer division consists of a *personnel* of 129, of which 117 are privates; 90 of these may be "specially enlisted men." The tent division has accommodation for 150 patients; three of the officers may be civilian surgeons. In the transport division no less than 60 of the Army Service Corps are employed but without an officer from that corps. Each field ambulance is attached to a brigade. There is also one for the corps troops. In a cavalry brigade there is only accommodation for a field ambulance equipped for 50 patients and the *personnel* is accordingly reduced to 120.

THE VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.

The annual banquet of the school will be held at the Trocadéro Restaurant, Piccadilly-circus, London, W., on Thursday, May 18th, at 7.45 P.M. The chair will be taken by the senior medical officer, Surgeon-Colonel P. B. Giles, V.D. The string band of the 1st Cadet Battalion of the Royal Fusiliers will perform a selection of music during the evening. Past and present members of the school can obtain tickets by applying to the mess president, Surgeon-Captain E. M. Callender, 47, Connaught-square, W.

THE WATER AT TREGANTLE FORT, PLYMOUTH.

It is notified in Plymouth Coast Defence orders that "troops are prohibited from drinking water or gathering crabs for eating purposes from the stream running past the firing points on B range at Tregantle, the water being polluted and unfit for use."

THE WAR IN THE FAR EAST.

The news from the theatre of war as to actual operations is extremely meagre and such being the case the crop of rumours is proportionately heavy. It is necessarily a time of tension and anxiety, for the importance of the result of the coming naval engagement cannot be exaggerated. Everything may be said to depend upon it. But no one can guess,

and still less foretell, what are likely to be the nature and the extent of the naval operations nor where they will take place. We know but little about the position of the Russian fleet at the present time and cannot safely conjecture where that of the Japanese lies hidden. A little insight into the condition of the Russian land forces may be obtained from an order recently issued by General Linievitch forbidding the destruction of stores without the express permission of superior authority. It appears to have come to the Russian general's knowledge that commissariat stores had been destroyed at a time when the troops were in urgent need of them and when no food rations and forage had been issued for several days.

In consequence of the recent decision to accept the services of medical men with degrees from foreign universities for service in the Far East, the Russian local papers say that already applications are coming to the Bessarabia and Kherson district councils from both male and female medical practitioners who have graduated in Switzerland, France, and Germany.

A travelling correspondent of THE LANCET, who was present at the retreat from Mukden and who reached Harbin towards the end of March, has written us an interesting letter. He found that in spite of his knowledge of the Russian language and of the scarcity of medical men, which made any medical assistance valuable, his English origin caused him to be always an object of suspicion. He says that he had great difficulty in getting to Mukden, though German and French medical men were allowed to visit the hospitals. Of Harbin he says that on March 28th the city contained 70,000 wounded. It was one large hospital; no less than 27 Red Cross hospitals were trying to cope with the terrible situation, while their efforts were minimised by the fact that the Russian army officers are at loggerheads with the Red Cross organisation.

Correspondence.

"Audi alteram partem."

SECURITY OF TENURE FOR MEDICAL OFFICERS OF HEALTH.

To the Editors of THE LANCET.

SIRS,—I was delighted to see in THE LANCET of April 29th a letter from Mr. Herbert Jones on this vitally important question. In my capacity as secretary for the North-Western Branch of the Incorporated Society of Medical Officers of Health my attention was drawn about a month ago to a case of equally great hardship to those quoted in your annotation. I do not think I am violating any confidence by giving you the particulars of it. The case is that of Mr. N. Hannah, for no less than 30 years medical officer of health for the Abram urban district council, near Wigan, Lancs. Mr. Hannah served this council for half a lifetime without any complaint having been made as to the performance of his duties. The district council concerned had been in the habit, we were informed, of making this appointment annually; on the re-appointment becoming due this year it was made a condition that the officer appointed should reside within a mile radius of the district council offices. Mr. Hannah, who is in private practice and who is also medical officer of health for an adjoining district, found it impossible to comply with this condition and was accordingly passed over when the appointment was made. The matter was reported by some member acquainted with the circumstances to the local branch of the Medical Officers of Health Society and a resolution was passed that the attention of the Local Government Board be drawn to this detrimental system of making annual appointments and particularly to the terms of advertisement for the appointment to which I have alluded. The meeting at which this resolution was unanimously carried was one attended by medical officers of health for counties, county boroughs, municipal boroughs, and urban and rural districts, and I can assure you that the greatest possible sympathy was felt for Mr. Hannah by the branch. I have no doubt whatever that if your readers would take the trouble of putting you in possession of information relating to cases similar to this the objects of the Bill now before Parliament would be considerably advanced.

I am, Sirs, yours faithfully,

Stockport, April 29th, 1905. MEREDITH YOUNG, M.D. Edin.

GALL-STONES AND CANCER.

To the Editors of THE LANCET.

SIRS,—The interesting paper by Dr. G. R. Slade in THE LANCET of April 22nd, p. 1059, and your annotation thereon are of so remarkable a character as to warrant some discussion. In the main one can have no difficulty in agreeing cordially with Dr. Slade's conclusions—conclusions which have already been accepted by most writers upon the subject—to the effect that the association between gall-stones and cancer is close and that gall-stones are the determining cause of cancer of the gall-bladder. His final conclusion, that cholecystectomy should be performed whenever possible if any thickening of the gall-bladder be found at the time of operation, is one the value of which I have often urged. In two papers published in the *British Medical Journal*, Vol. I., 1903, p. 186, and in THE LANCET of April 30th, 1904, p. 1190, and in my work on "Gall-stones and their Surgical Treatment," I have pressed the claims of cholecystectomy in place of cholecystotomy in many cases. Dr. Slade indeed repeats some of the arguments used by me in those articles. But although I agree with Dr. Slade's conclusions, I cannot admit that his figures are anything but exceptional. It is perfectly clear that the whole series of cases was of an unusual character. 61 operations were performed with 17 deaths, a mortality of 27·8 per cent. That alone shows the serious nature of the cases and I venture to assert that the conditions found on post-mortem examination are as far from the average as is a mortality of 27·8 per cent. from the average mortality of operations performed for gall-stones and the complications caused by them.

So far as concerns the frequency of cancer in association with gall-stones, the evidence afforded by the statistics of the surgeons does not coincide with the experience of Dr. Slade. Carcinoma of the gall-bladder does not occur in 18 per cent. of operations and it certainly cannot be admitted that "over 50 per cent. of all cases of gall-stones end in malignant disease." It is clear, I think, that the earlier stages of gall-stone disease in which operation should be practised, so that these grave complications are avoided, is very sparsely represented in this series. If malignant changes were at all common in thickened gall-bladders we should have more evidence of it in the examination of such gall-bladders after cholecystectomy and we should hear more of troubles subsequent to the performance of cholecystotomy when such conditions were present.

I have performed cholecystectomy over 40 times. In two of these cases the gall-bladder was removed because it was clearly affected with malignant disease. In 18 there was gross thickening of the walls of the gall-bladder; in only one of these specimens was malignant disease found after careful examination. So far as I know only two cases have been recorded of malignant disease of the gall-bladder occurring in patients upon whom cholecystotomy had been performed. Both these cases are mentioned on p. 325 of my book on gall-stones; they occurred in the practices of Mr. H. Lawford Knaggs and Mr. A. W. Mayo Robson. When many surgeons can number their operations for gall-stones by hundreds and a few by thousands, it seems reasonable to suppose that if malignant disease occurred after cholecystotomy we should hear of it occasionally. I submit, therefore, that the gall-bladders, thickened by chronic inflammation, which are removed by operation do not show evidence of malignancy on investigation in anything more than a very small proportion of cases and that such gall-bladders when drained by the operation of cholecystotomy do not suffer from malignancy subsequently except in the rarest circumstances. It is, I am fully aware, often difficult to reconcile post-mortem experience with the experience of the operation table, especially when the material in each case is liable to considerable variations. The number of cases in each class in Dr. Slade's series is so small that it is quite possible that a further investigation will alter the results considerably. So far as concerns the remarks under "Surgical Aspects," I do not hesitate to say that the figures given are opposed to the published experience of all surgeons whose cases are numbered in hundreds—Kehr, the Mayos,

Mayo Robson, and to my own. Thus in 547 operations recorded by Dr. W. J. Mayo malignant disease was found 25 times, a percentage of rather less than five. In this series are ten cases of "exploration" only, the condition found being inoperable. In Kehr's statistics the malignant cases and the acute infective cases are grouped together; of these, there were 129 cases in a total of 1000. In 500 cases operated upon by Mayo Robson there were 49 cases of malignant disease. In my own experience malignant disease has been present in almost exactly 5 per cent. of the cases submitted to operation. And these statistics include not cases of malignant disease of the gall-bladder only but cases of malignant disease in the liver or the head of the pancreas or any part of the bile passages.

Though I cannot agree that Dr. Slade's experience represents, even approximately, the average, I cannot but feel that his investigation is one of great worth and that his support of the view I have long held of the necessity for the more frequent performance of cholecystectomy is most valuable. I think his figures are exceptional but I am sure his conclusions are sound.

I am, Sirs, yours faithfully,

Park-square, Leeds, April 27th, 1905. B. G. A. MOYNIHAN.

EPIDEMIC CEREBRO-SPINAL MENINGITIS.

To the Editors of THE LANCET.

SIRS,—In view of the epidemics of cerebro-spinal meningitis prevailing at present in New York and elsewhere it may be of interest to report three cases which occurred 12 months ago in my practice in the country near Banbridge, co. Down, and which I regarded at the time as cerebro-spinal meningitis. All three patients belonged to the same family and lived in the same house.

1. The patient was a girl, aged nine years. The mother told me that she had been ill for five days with headache and pains in the back, but she had not been in bed before I saw her. She cried frequently, was dull and listless and slow to answer questions. She had marked photophobia. The temperature was 102° F. and the pulse was 100. Examination of the chest and abdomen revealed nothing abnormal except a slight petechial rash over the skin; the spots were small and distinctly hæmorrhagic and quite unlike any of the ordinary exanthemata. The tongue was slightly coated; the throat was inflamed; there was no diarrhœa. She was placed in bed in a darkened room with ice applied to her head. Four hours later I received a telegram saying that she was dying, and so it proved. She had had a series of very severe convulsions, the temperature ran up to 106·4°, and, in fact, she died half an hour after I arrived. I was painfully surprised at this abrupt termination but I did not suspect then that the case was anything but meningitis of one of the usual types.

2. Nine days later in the same house I saw a boy, aged 14 years, a brother of the first patient. He had been ill for two days and his symptoms were almost identical with those of his sister when I first saw her. Continuous pain, mental torpor, photophobia, and petechial rash were all present. He also had an inflamed throat and the temperature was 102° F. The following day he was worse; there was well-marked retraction of the neck and spine and Kernig's sign was present; later there were spasms of the muscles but no convulsions, also hyperæsthesia over the spine, with increasing pain and difficulty in extending the legs. It seemed a typical case of cerebro-spinal meningitis and to confirm this view I proceeded to perform lumbar puncture to have the cerebro-spinal fluid examined for the diplococcus. In this, however, I unfortunately failed, for on inserting the needle, owing to the violent struggles of the boy and the sympathy of his father, I was compelled to desist, to my lasting regret. This was on the fifth day of his illness; about the seventh the symptoms began gradually to subside and he was convalescent in a fortnight. He was placed on no special treatment beyond rest and isolation in a darkened room, ice-cap, bromides, and antipyrin. The rash gradually disappeared during recovery after the other symptoms subsided.

3. During the convalescence of the last patient his sister, a girl aged 18 years, took ill in exactly the same way. She developed all the symptoms enumerated above, including the petechial rash, but they were less severe and convalescence set in about the tenth day. Both these last two cases were quite well within three weeks and no other similar cases occurred in the house or neighbourhood.

Without having bacteriological proof I would like to know whether the above history and symptoms should justify the diagnosis of cerebro-spinal meningitis in the absence of an epidemic and, if so, in what way might such an occurrence be explained. There was, of course, the epidemic in Dublin five years ago which I was fortunate enough to witness but since then I had neither seen nor heard of any cases in Ireland until these three occurred in such a curious, and to me inexplicable, manner.—I am, Sirs, yours faithfully,

J. HOPE REFORD, M.D. R.U.I.

Crossmyloof, Glasgow, April 20th, 1905.

To the Editors of THE LANCET.

SIRS,—The leading article on Epidemic Cerebro-Spinal Meningitis in THE LANCET of April 15th has drawn the attention of the medical profession in England to this disease; at the same time the English-speaking community on the continent has read of it *ad nauseam* in the columns of the *New York Herald*. It would appear that all which has been discovered in connexion with this disease should be matter of common knowledge, at any rate to our profession. Yet, as your article says, "our knowledge of the conditions leading to the epidemic spread of cerebro-spinal fever is of the scantiest." Some four years ago when in Egypt I read an interesting paper by the late Major Hill-Smith, R.A.M.C., of the Egyptian Army Medical Corps. It was published, I believe, in the annual report of the principal medical officer of the Egyptian army in 1899 or 1900. As I have never seen this paper referred to I presume that it did not attract any attention, yet at a time when once more so much is written of epidemic cerebro-spinal meningitis I may be excused for quoting from memory from a paper which contained an observation of possible importance. When after the battle of Omdurman the Egyptian army took possession of the town an epidemic disease soon arose among the troops quartered in the neighbourhood of the Mosque square. This disease was proved to be epidemic cerebro-spinal meningitis clinically and pathologically and, as far as the conditions obtaining at Omdurman allowed, bacteriologically. The disease first broke out among the companies occupying certain buildings which had been used previously by the Khalifa as stables for the horses of his cavalry and quarters for the men in charge of the horses. The case incidence was much the heaviest in this spot and spread in diminishing intensity from it, indicating, as Major Hill-Smith's map clearly showed, this as the original focus of the disease. Following up this clue it was found on inquiry that a fatal form of horse sickness had been endemic in these buildings and that two years previously it had been so severe and so fatal that the stables had been abandoned and not used until their occupation by the troops of the Egyptian army.

These facts seem to warrant at least the suggestion that the horse sickness and the outbreak of cerebro-spinal meningitis had some close connexion, a suggestion to which subsequent observations of Major Hill-Smith further up the country lent additional support, if I remember his paper correctly, but at this distance of time I cannot be sure of these last observations. With regard to the facts about the epidemic at Omdurman my memory is, I think, accurate, as I spent some six months in Omdurman shortly after reading this paper and the impression of it was increased by the local associations. Where, as the writer of your article admits, our knowledge is so scanty any suggestion based on accurate observation is worth attention and so I venture to recall to your notice the late Major Hill-Smith's paper.

I am, Sirs, yours faithfully,

Florence, Italy, April 19th, 1905. EDWARD A. GATES.

PEOPLE'S SANATORIUMS AND PRIVATE SANATORIUMS.

To the Editors of THE LANCET.

SIRS,—I have read with interest the first part of your Commissioner's report written from "Nordrach." There cannot be too much enlightenment on the methods and practice of the different sanatoriums, even of one so familiar to most of us interested in the treatment of tuberculosis as Nordrach Colonie.

May I, with your permission, make one or two remarks? I do not hold a brief for Jones's Homes at Sandgate, nor do I approve of its arrangements if they are carried on in the style described by *Truth* from time to time. It seems to me, however, scarcely consistent with fairness to take the private

sanatorium of Dr. Walther at Nordrach Colonie as being the one referred to in the circular as "the open-air cure practised at Nordrach, Leysin, &c.," as evidently (taking into consideration the cost of treatment) the *people's sanatoriums* are the places referred to. One of these existed at Nordrach (village) where the patients (sent by the State insurance societies) occupied the ordinary village houses and when passing through a few years since I saw dozens of these patients walking about through the streets, in and out of the shops, just as they are described as doing at Sandgate. At another village in the Black Forest, Schomberg, where Herr Römpler's and another private sanatorium are situated, there was also a Volk's Sanatorium on the boarding-out system. One or two curiously decorated structures were pointed out to me as galleries or verandahs which looked out on a narrow and shut-in street.

If your Commissioner would describe some of these Volk's Sanatoriums and give details of how the patients spend their day, the quality of their dietary, and the character of the rooms they occupy many of your readers would be extremely interested. My own experience when in Germany was that the often-described sanatoriums of Falkenstein, Hohenhoneff, and Nordrach Colonie are comparatively easy to see but that the less known institutions were not always easy to obtain information about. As an instance, I was unblushingly informed at one sanatorium that another (not 20 miles distant) did not exist. Dr. F. Rufenacht Walters gives a list of people's sanatoriums in his "Sanatoria for Consumptives," but several names might be added now to that in the 1901 edition.

Your Commissioner impresses one as taking rather a different view of the infectivity of phthisis from that expressed in your excellent leading article on Public Health in the Transvaal, where you emphasise the fact that in pulmonary phthisis infection is only possible when certain simple precautions are not observed.

It has been repeatedly pointed out that the presence of sanatoriums in the villages had a beneficial educational effect—e.g., Falkenstein and Göbersdorf. About eight years ago in this city (Belfast) the fear of the infectivity of phthisis was so rampant that great difficulty was experienced in obtaining a new site for the Consumption Hospital. Now this dread has so far subsided that applications are constantly being made for permission to build villa residences inside the hospital grounds.

I am, Sirs, yours faithfully,

F. HOWARD SINCLAIR,
Visiting Physician, Forster Green Hospital, Belfast.

Belfast, April 30th, 1905.

SHOCK AND COLLAPSE.

To the Editors of THE LANCET.

SIRS,—I quite agree with Mr. P. Lockhart Mummery that arguments should be based on experimental evidence, but these arguments must satisfy the ordinary laws of reasoning. I based my arguments on the elementary fact which has been overlooked by Mr. Mummery—namely, that fluid transmits pressure equally in all directions. Surely this requires no further experimental proof. Mr. Mummery apparently thinks that increased atmospheric pressure tends to drive the blood from the peripheral to the deeper vessels but that this does not occur in health because the vaso-motor centre compensates for it by altering the calibre of the vessels. (Has Mr. Mummery any experimental proof of these views?) Are we to understand that the vaso-motor centre can keep open vessels which are subjected to an increased pressure of, say, two atmospheres? If so, by what mechanism does it do so? I pointed out in my former letter that increased atmospheric pressure could not affect the distribution of blood in the vessels because it was transmitted to all parts of the circulation equally. If it cannot alter the distribution, how can it alter the blood pressure? If the absolute pressure of the blood be x and the atmospheric pressure be y, the blood pressure as determined by instruments is $x-y$. If we increase y we increase x by the same amount according to the ordinary laws of hydrostatics and the blood pressure remains $x-y$. As to Crile's experiments I have not been able to refer to his book and must therefore rely on the short abstract given in the second lecture on p. 782. These experiments consisted in placing dogs in a condition of shock in tubes and then raising the air pressure in the tubes. It is not clear from the description whether the animal was completely inserted in the tube or whether it was only partially so inserted, but from the account given I concluded that part of the animal was outside the tube, because of the fact that the blood pressure was apparently recorded and it is not easy to see how this could be done if the whole animal was in the tube. I am confirmed in this view by the statement that, arguing from these experiments, "Crile attempted to treat human beings *in the same way*." A description follows of the pneumatic suit in which the head and thorax are left outside. These experiments, then, refer to *localised* pressure only and I do not see how they support the hypothesis that *general* increase of atmospheric pressure will cause a rise of blood pressure.

Mr. Mummery says that in health increased abdominal pressure does not produce any appreciable alteration in the blood pressure because the vaso-motor centre is able to compensate for it. No doubt this is true within limits but is there no increase of blood pressure during forcible abdominal compression such as occurs in straining or during a vigorous muscular effort? It is obvious that when the abdominal vessels are dilated and the blood pressure is low the same amount of pressure will produce a larger effect than under normal conditions.

I am, Sirs, yours faithfully,

CHARLES POWELL WHITE.

St. Thomas's Hospital, S.E., May 2nd, 1905.

"THE KING'S CORONER."

To the Editors of THE LANCET.

SIRS,—Your reviewer of the above book says:—

(1) The mere citation of the names of cases might well have been supplemented by more or less copious extracts from them upon any points likely to occur in practice. There would seem to us to be room, therefore, for a carefully compiled work of this class by a sound lawyer, with (2) perhaps chapters not only on such subjects as the law of evidence but a few practical hints on the actual eliciting of it from witnesses and upon such cross-examination as the coroner is justified in administering in order to sift their stories where he has no legal assistance from interested parties.

Concerning (1), I may say that I have been engaged for a considerable time upon the work suggested, so that "Mr. Henslowe Wellington will amplify his work in this direction" as proposed by your reviewer. Concerning (2), "the law of evidence" and "the actual eliciting of it from witnesses and such cross-examination as the coroner is justified in administering" can only be acquired by attending the Central Criminal and other High Courts and carefully studying the judge, counsel, and witnesses, as is the daily routine of,

Yours faithfully,

R. HENSLOWE WELLINGTON,
Barrister-at-Law and Deputy Coroner.

Temple, April 29th, 1905.

*** We understand Mr. Wellington to mean that he had intended to do what our reviewer recommended him to do—an example of what the American psychologist called "the simultaneous consaltation of higher intelligences."—ED. L.

ASSOCIATION OF MEDICAL DIPLOMATES OF SCOTLAND.

To the Editors of THE LANCET.

SIRS,—It is the intention of the above association to present a petition to the Royal College of Surgeons of Edinburgh at the forthcoming fourth centenary praying that the title of "Licentiate" may be altered to "Member." Let me urge upon those holding diplomas of the Scottish corporations to join the association forthwith in order that we may voice the wishes of all the Licentiates. It is very important that this object should be pushed forward as rapidly as possible. Our honorary secretary, Dr. David Walsh, 18A, Hanover-street, W., will be glad to receive the names of those interested in this urgent and far-reaching movement and wishing to become members.

I am, Sirs, yours faithfully,

CLAUDE ST. AUBYN-FARRER, President.

London, W., May 1st, 1905.

THE PETITION OF THE LICENTIATES OF THE SOCIETY OF APOTHECARIES TO THE GENERAL MEDICAL COUNCIL.

To the Editors of THE LANCET.

SIRS,—Will you allow me to state, in reply to numerous inquiries, that the number of practitioners *really* affected by the non-descriptive title of L.S.A. appears to be greater than is generally supposed? An examination of the Medical

Directory for 1905 shows that 1571 persons now practising hold the diploma in medicine, surgery, and midwifery of the Society and of these 809 (nearly 51 per cent.) have taken no additional qualification. It has been suggested by some correspondents that the Society should seek the designation of Faculty of Physicians and Surgeons of London. Such persons have not studied the history of the London medical corporations or they would know that the charter of the College of Physicians was granted to "the President and College, or Commonality, of the Faculty of Physic of London." The body of the Licentiates of the Society has no desire to usurp the titles of other corporations, and that which is asked for in the petition (Lic. Med., Surg., and Midwifery of the Society of Apothecaries) was carefully considered so as not to trespass on the rights of other bodies and at the same time to do a simple act of justice to a considerable number of practitioners. May I ask any Licentiates who have not sent their proxies for the signature of the petition to do so at once?

I am, Sirs, yours faithfully,

A. RIVERS-WILLSON,
Oxford, May 1st, 1905. Chairman of Petition Committee.

SCHOOL ATTENDANCE AND PUBLIC HEALTH.

To the Editors of THE LANCET.

SIRS,—I think the attention of your constituency should be drawn to the present irrational and intolerable methods of insuring attendance at elementary schools. In innumerable instances the attendance officer discharges his duties without exercising the slightest discretion, with the result that the poorer classes are often subjected to a petty tyranny of officialdom little better than that of certain notorious continental States, and, in addition, are subjected to real danger and suffering in the matter of health. The regulations seem to allow of only two alternatives: a child must attend school or the parent must provide a medical certificate. It is perfectly obvious that an unreasoning interpretation of this rule will often involve, to parents and children, much unnecessary trouble and pain; but what is more serious will often lead to very great risks to public health. Everyone knows that there are many cases of slight but troublesome illnesses, such as nasal catarrh, toothache, diarrhœa, and biliousness, where the parents are competent to judge that the child is unfit for school. In these cases the strain of school work or the exposure in school grounds may induce a serious illness and yet I can cite cases where the parents are continually being compelled to incur the expense of calling in a medical man on such trifling occasions as these.

I know many cases of delicate children with frequently recurring slight attacks of bronchial catarrh, sore-throat, &c., who need only the warmth and care of home for a day or two to restore them to ordinary health. Many of these parents cannot afford repeated fees for medical attendance. The result is that many children are at school who are *known* to be in an unfit state of health and the public health suffers in consequence. What is worse, I am able to prove that the want of discretion in the attendance officer often contributes to the spread of infectious diseases. Take my own district. By extreme measures we succeeded in eliminating nearly all cases of scarlet fever in this township. A fortnight ago two households were still infected. Hoping to confine the cases within these moderate limits, I felt justified in subjecting the houses to a prolonged isolation and requested the schoolmasters to allow no children to attend school from those houses until declared by me free from from infection. A fortnight ago the attendance officer insisted on the attendance of the children at school from one of the proscribed houses. A few days later a child of the family who had been from home during the actual visitation of the epidemic developed symptoms of scarlet fever, thus proving the house to be still infected. Within a week several scholars in the same school were also seized. This and similar cases are due to a blundering officialism which is far more eager to obtain the Government grant than to secure the best interests and real education of the children. I have even come across absurd cases where the inspector with the medical certificate before his eyes has insisted upon bandages being removed from an injured limb that his own petty officialism may be convinced. Certain inspectors insist that although the child is undoubtedly and seriously ill the medical certificate must be produced. It is scarcely credible but I have given a medical certificate for non-attendance, the certificate has been sent to the schoolmaster but has miscarried, and the parents have actually been summoned and fined in spite of a note from me explaining the circumstances!

What right has any attendance officer to assume that every parent is absolutely indifferent to his children's education? My experience is that parents are usually anxious to secure the best education for their children and are loth to see them surpassed by those of their neighbours. A law that was made for delinquents, I aver, is being employed to tyrannise over the well-disposed. In individual instances there are likely to be mistakes, but when the mistakes become the allowed and encouraged rule, especially when those mistakes result in universal annoyance and danger to the public health, it is indeed high time some determined effort were made to rectify them. To bring this grievance of the poorer classes home to our middle class, a friend spent a holiday in Preston with his daughter, a child of ten. The holiday did not happen to coincide with the stipulated school holiday. During the visit the child's life was made intolerable and her walks were almost entirely put a stop to by the unwarrantable interference with her liberty. Repeatedly she was pounced upon by attendance officers who treated her guardian, whether mother, father, or governess, with scant courtesy. Once she was caught alone when the official entered upon a tirade against "the criminal neglect of her father," who, by the way, is himself a public educationist.

Apart from the complaints I have made above this continual terror and tyranny must have an injurious effect upon the younger generation and is likely, unless remedied, to add one more element to the immense nervous stress that oppresses modern life and helps still further to add to the inmates of our crowded asylums. At least one grievous injustice should be immediately abolished. If school authorities compel the production of a medical certificate they should be also required to pay for it. I am inclined to believe some little condition of this nature will tend considerably to correct this blatant abuse.

I am, Sirs, yours faithfully,

A. E. W.

THE INTERNATIONAL ASSOCIATION OF THE MEDICAL PRESS.

COMMITTEE MEETING AT BERNE.

(FROM A SPECIAL CORRESPONDENT.)

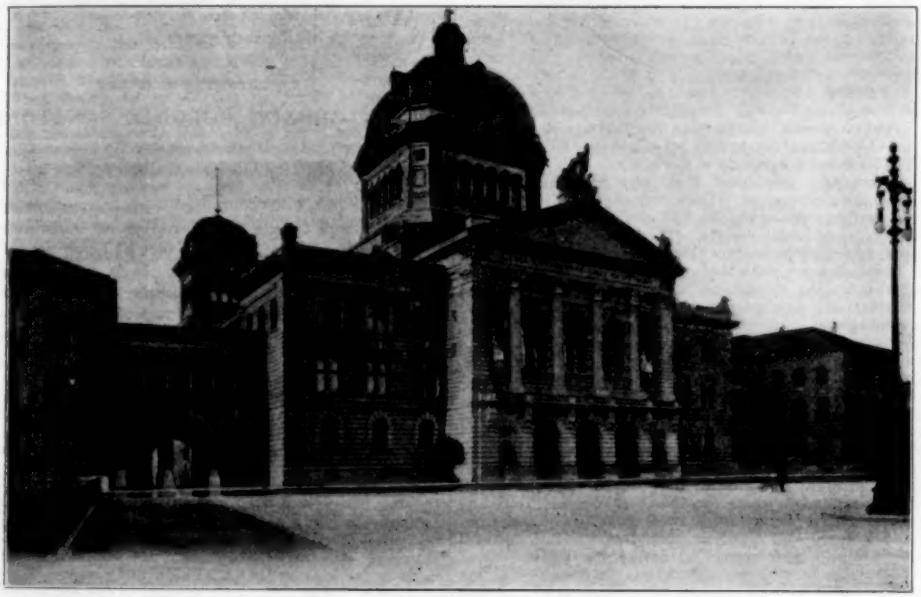
Berne, May 1st.

THE committee of the International Association of the Medical Press met at Berne on April 27th and 28th. The Government of the Swiss Republic very graciously placed Committee Room No. 4 of the Houses of Parliament or Federal Palace at the disposal of the association. M. Ringier, the Chancellor of the Swiss Confederation, was present to receive the members of the committee and to welcome them in the name of the Swiss Republic. In a few well-chosen words he declared that he was profoundly touched by the honour conferred on his country when the representatives of the medical press decided to meet in the capital of Switzerland. But the other towns, in fact all Switzerland, would join in welcoming those who rendered great service to the science which did so much for the benefit of humanity at large.

It was at 9.30 A.M. that the committee met, and already on the previous day there had been much informal talk during the dinner and evening spent together at the Hôtel Bellevue. These conversations are almost as useful as, in some cases even more useful than, the formal meetings. It is by such intercourse that much information is obtained and plans are conceived and criticised. Dr. Carlos M. Cortezo, President of the International Association of the Medical Press, sent by telegraph his "affectionate salutations" and explained that, having just been appointed Minister of Public Instruction, he could not spare the time necessary to attend and to preside over the meeting of the committee; he therefore requested the Vice-President, Dr. Posner of Berlin, to occupy the chair in his stead. One of the first acts of the committee was to send a telegram of felicitations to His Excellency Dr. Cortezo. In his absence the Association of the Spanish Medical Press was represented by Dr. Larra y Cerezo who, it will be remembered, was general secretary of the International Congress of the Medical Press held at Madrid in

1903. Dr. Posner represented the Association of the Medical Press in the German language; this comprises the whole of the German Empire and the German-speaking portions of the Austrian Empire. The Association of the French Medical Press deputed the general secretary of the International Association, Dr. R. Blondel, and Dr. T. Amédée Doléris. The Association of the Belgium Medical Press sent Dr. Victor Pechère, who is treasurer and assistant secretary of the International Association. The Association of the Portuguese Medical Press was represented by the general secretary of the forthcoming Fifteenth International Congress of Medicine, Dr. Miguel Bombarda. The Association of the Italian Medical Press was represented by Dr. L. M. Bossi of Genoa and the Association of the British Medical Press by Mr. Adolphe Smith. There is as yet no Association of the Medical Press of Switzerland and only two important medical papers are published in that country; one is in the French and the other in the German language. These two papers work on friendly terms one with the other and Dr. A. Jaquet of the *Correspondenzblatt für Schweizer Aerzte* was present as a Swiss representative. Early in the sitting, the chairman, Dr. POSNER, welcomed the presence of Dr. Jaquet and hoped that he would always attend as the medical press of Switzerland was a credit to the country.

how far the committee was justified in accepting invitations and hospitality involved matters of principle which would have to be discussed. Ultimately and on the initiative of Dr. Cortezo and Dr. Posner it was decided to meet at Berne. From Norway and Denmark letters of excuse based on the great length of the journey to Berne had been received and thus these nations could not send delegates. No answer had come from America and an unfortunate misunderstanding had arisen with Russia. The Russian delegate to the Paris Congress had telegraphed from Trouville that he was unable to attend. Thereupon another medical man presenting a document in Russian which no one could read had applied and had been welcomed at the Paris Congress. It appeared, however, that he did not represent the Russian medical press at all but a paper published in the Baltic provinces and in German. Many apologies for the error had been made but the Russian medical journalists seemed very much aggrieved by this mistake. In conclusion, Dr. Blondel pointed out that during the greater part of the last ten years the idea of an international association of the medical press had existed only on paper. Now, however, they were in a position to proceed from theory to action. It had been at first agreed that all existing national associations of the medical press



The Federal Palace, Berne, where the Committee of the International Association of the Medical Press held its meetings.

The business opened with the report of the general secretary, Dr. BLONDEL, who first explained that the last meeting of the committee was held in September, 1903, at Brussels, immediately after the International Congress of Hygiene. On that occasion, Great Britain was represented by two delegates, France by two, and Portugal, Norway, and Belgium each by one delegate. It was then decided that nations could send substitutes for the committee-men elected at the last congress and also that the vote of the committee should not be by nationality, but as the last committee meeting was not well attended that these questions might be again taken into consideration. At that time the question of subscriptions could not be discussed because the treasurer was not present. Dr. Blondel explained how the committee had been invited to hold its next meeting at Salsomaggiore in Italy, but that some of the members of the committee meeting at Brussels expressed doubts as to the wisdom of accepting such an invitation. Dr. Blondel, after travelling all the way to Milan to ascertain full details, found that the invitation had been made by irresponsible persons who had promised more than they could perform and the project fell through. The question as to could become members of the international association though now it might be necessary to be somewhat more careful. But the first necessity was to acquire a decided influence and as a small step in this direction it would be proposed to publish a report of proceedings or an annual report. An attempt had been made to limit the right of the exchange of journals to members of the association but this had not succeeded, nor had it been possible as yet to obtain special railway privileges for members of the association.

After an expression of thanks to Dr. Blondel for his report the question as to how the committee should vote was taken first.

Mr. ADOLPHE SMITH explained that though he was the author of the proposal for a proportionate vote by nationality at the congresses or general meetings of the entire association he thought that the committee was purely an executive body. It was not its business nor had it the power to alter the constitution or policy of the International Association. Its only purpose was to carry into practice what had been agreed upon at the general meetings. In such purely practical matters only those who knew the facts could decide and only those actually present could assume the responsibility of

such decisions. At Madrid and at Brussels the committee had voted by a show of hands.

After some brief observations by Dr. BOSSI, Dr. PECHÈRE, and Dr. BOMBARDA it was unanimously decided to adhere to these precedents. It was also stipulated that this matter having now been discussed at Madrid, Brussels, and Berne, it should not be raised again at the next meeting.

Dr. PECHÈRE (Belgium) inquired if a member of the committee could represent two nationalities. For instance, if his neighbours of the Dutch medical press had asked him to represent them, could he have accepted such a mission? In answer it was pointed out that such a contingency was not provided for by the rules and the committee had no authority to alter the rules.

Dr. BLONDEL explained that in striving to group the medical press it was essential to facilitate the meetings of its representatives. The cost of bringing the members of the committee together from all parts of Europe was very great and the question was whether it would be right to profit by offers made "out of respect for the press." There were wealthy health resorts which would like them to meet there. They had such constant and intimate relations with the railway companies that they could more easily obtain railway passes.

A very lengthy discussion ensued. Dr. PECHÈRE pointed out that in Belgium "journeys of medical study" were organised and the reduction in railway fares and the hospitality offered to the medical students who on these occasions visited health stations had never been subject to any unfavourable interpretation. But it would be necessary to go to different places and countries and not to show any sort of favouritism.

Dr. POSNER stated that German medical associations did not consider themselves in any way compromised because they had accepted hospitality at Carlsbad.

Dr. BOMBARDA considered that they could not be too jealous of their reputation. They were certainly justified in receiving railway passes but he had doubts about accepting the hospitality of health resorts. It was not what they did but what others might suspect them of doing.

Dr. BOSSI thought that there was much exaggeration in what had been said, though he fully understood the delicacy of the situation. One thing, however, was perfectly certain. They would never go to any place if expected to write about it and to praise its resources.

Mr. ADOLPHE SMITH said that in principle there could be no doubt that they should be absolutely independent and it would be best to accept nothing whatsoever. As for moral influence the most obvious proof of strength would be the fact that each national association was able to pay the cost of sending its representatives to the meetings of the committee. A few persons meeting together at the expense of their own societies would mean more and be more influential than a larger number whose presence had been facilitated by some outside help. On the other hand it might be necessary in the beginning and pending such time as the national associations were rich enough to defray the entire cost of their delegates to seek some facilities, such as a reduction in railway fares, so that the cost of meeting might be less burdensome.

An animated discussion then ensued in the course of which it was urged that the hospitality of a State, a municipality, or a railway might be accepted but not that of an industrial society owning mineral waters and such enterprises and that as representation on the committee was limited to three for large nations and two and one for smaller nations, the obtaining of facilities could not do more than secure a full attendance. It was also pointed out that at medical congresses all sorts of invitations were accepted. Finally the following motion was adopted:—

> In view of increasing the importance and authority of the annual meetings of the committee by augmenting the number of delegates present, the meeting held at Berne in 1905 decides to appeal to the activity of the National Associations of the Medical Press so that they may endeavour to defray out of their own budgets the travelling expenses of their delegates to these meetings. Pending the completion of such organisation the general secretary of the International Association is at liberty to negotiate with the national organisation of the country where the annual meeting will be held in regard to all facilities for travelling and for the sojourn of the delegates coming from other countries.

The question of finance was then discussed. The general secretary, Dr. BLONDEL, stated that if everyone had paid their subscriptions there should be 2080 francs in hand. All the expenses so far had been limited to a slight amount of printing and a considerable amount of postage, for which he had not claimed reimbursement. It now appeared that through a misunderstanding the treasurer had not asked for any payments. It was resolved that though it was decided at Monaco in 1902 that the different nationalities should pay annually 20 francs for each member whom they had the right to appoint on the committee, yet as this was not confirmed till the Madrid Congress of 1903, the first financial year of the definitely constituted International Association of the Medical Press commenced on Jan. 1st, 1903. The committee, it will be remembered, consists of four members for the Association of the Medical Press in the German language, of three delegates each for the Medical Press Associations of Great Britain, France, Italy, Russia, and the United States of America, of two for Belgium, and of one each for other nations. All these delegates will now be called upon to pay the arrears due.

The fact that no Russian representative was present was discussed and the following memorandum was drawn up, signed by all present, and will be forwarded to the Russian medical press representatives:—

> The delegates of the medical press of Germany, Great Britain, Belgium, Spain, Italy, France, Portugal, and Switzerland, meeting in accordance with their statutes at Berne on April 27th, 1905, regret that anterior misunderstandings may have retarded the affiliation of the Russian press to the International Association of the Medical Press and cordially invite their colleagues of Russia to manifest their desire to join and to nominate forthwith the three delegates whose mission it will be to represent them on the committee.

The morning sitting then concluded.

(To be continued.)

THE NORDRACH COLONIE SANATORIUM.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

(Concluded from p. 1168.)

Nordrach, April 22nd, 1905.

AT Nordrach Colonie exercise plays as important a part in the treatment as the mere fact of being out of doors or of keeping the windows open. It is the morning walk especially, the walk that will create the appetite for the principal meal of the day, that is considered the most important. At 8 o'clock breakfast is served, consisting of pure milk or "coffee" containing more milk than coffee, various sorts of bread, delicious butter, honey, jams, and as much tender cold meat as the patients can eat. But at half past eight everything is swept away and the patients are hurried off each to his allotted task of walking. What is, however, still more surprising is the fact that after dinner, without rest or respite, the walks have to be resumed again. Whatever the weather, rain or snow, the patients must set off for the mountains and the forest. On one occasion an English patient caused much amusement by pathetically pleading for release from this task on the ground that it was Bank Holiday. The plea, however, was not admitted as there was no evidence to show that the habits and customs of the Koch bacillus had in any way been affected by the enactment of the British Bank Holiday Act. In any case it is generally thought that rest should be accorded after meals and that it is essential to eat slowly. There is also an opinion prevalent that it is best to eat little but often. Of course, there are exceptions at Nordrach Colonie as elsewhere, but as a rule these principles are not accepted here. There are only three meals per day. These are devoured at express speed and, with the exception of the evening meal or supper, the patient begins immediately after eating the hardest exercise of which he is capable. Not only are the meals eaten quickly but the food given is that which contains the maximum nutriment in the minimum quantity. There are roast meats, lentils, potatoes, and some, but not much, of the lighter vegetables such as greens and salads. It certainly is a northern diet, there are no "playing with food," no fancy dishes to stimulate flagging appetites, and no loitering over numerous courses. The meals are suited to people of robust health rendered hungry by a bracing climate and unceasing outdoor muscular exertion.

For the ideal sanatorium it is necessary to be surrounded with ideal scenery and a great variety of walks. This and the climate are the chief attractions of Nordrach Colonie. Wood, dale, valley, mountain torrent, babbling brook, majestic mountains, panoramic scenery,—all this abounds and must invigorate and divert especially those

who have experienced for long the depressing influence of town life. But the good effects that are thus derived from nature must not be marred by bad sanitation, bad ventilation, or bad food. The sanitation has already been partially described. The drainage is by water carriage into watertight cesspools situated at a considerable distance from the dwelling. These are emptied by an odourless pneumatic system and their contents are carried on to the land. The ventilation, as previously stated, is very thorough and might be described as of hurricane force; but the best measure of all is the complete separation of the various dwellings, each containing but a small number of patients. The Anstalt or largest building, with 20 patients, is about 250 feet from the road and much above it. It is some 400 feet from the Herrn House, with its 16 patients and 150 feet of mountainous ascent from the Swiss cottage, which, however, only holds two patients. In the opposite direction, some 600 to 700 feet away, there is the Roskulla House with nine rooms and no buildings stand between these, the homes of the patients. The Ebler House with five patients and the Finkenzeller with ten convalescents are very much further away. It is this inexhaustible supply of open space and of fresh air that is the most effective measure of hygiene.

Having by all these advantages created an appetite and stimulated the powers of digestion it is all important that the food given should be of the best quality, that is to say, as nutritive as possible. The meat must therefore be tender and succulent. For this it does not suffice to procure the best meat, it is also necessary that it should be hung long enough to become tender. There is an engine-house worked by water power and here ice is made and the meat is kept in a cold storage room. The temperature is just a little above freezing and the meat is hung for about ten days, so that it has not time to lose its flavour and become insipid, like most cold-storage meat, but it does become thoroughly tender. The final point is that the meat should be sufficiently cooked without being overdone. Quality, time of hanging, skill in cooking—these are the three necessary conditions and it must be said that their importance is fully appreciated at Nordrach Colonie. Of as much, if not of greater, importance is the question of milk. Undoubtedly a sanatorium should keep its own cows. It would not be safe to depend on a milk dealer who supplies milk only under such conditions as will yield as large a profit as possible. Milk in the Black Forest is sold at 18 pfennigs the litre. At Nordrach Colonie 10 cows are kept and it would hardly pay to sell their milk at 24 or 25 pfennigs the litre. The barley on which they are fed costs a large sum per annum. If cream is required for cooking purposes, for tea, for cakes, it is purchased in the neighbourhood and not taken from the milk of the cows that are specially fed. Besides barley they are given the best hay and are not often allowed to graze on fresh grass. If the milk-supply should fall short the attendants are given ordinary milk which is bought outside; but the patients always get the milk from the cows especially kept on the estate for them. The difference between this and ordinary milk is very noticeable; and it is the care and the money spent on all these details that constitute the real secret of the Nordrach treatment. It must also be borne in mind that this treatment is subject to modification from hour to hour. The patient's temperature is taken at least three times a day. Three times a day his medical attendant sees him and notes the effects produced by the treatment, the food, and the exercise. Further, the patient sits three times a day at table with his medical attendant who helps him to his food, watches him eat, and bears at the moment itself any complaint that the patient may make in regard to his meals. This process I watched carefully and with interest. Each of the medical attendants sits near to his own patients. The meat is cut in moderately small slices and brought ready cut on a large plate. The medical attendant places on each dish one, two, or three slices and in giving this to the servant indicates for whom it is intended. Thus every detail of the patient's life is carefully watched and controlled from hour to hour. As previously stated, there are no shops, cafés, restaurants, or public-houses accessible where he can get what has not been prescribed. There is but a small kiosk, useful mainly to amateur photographers, a picture of which I, as an amateur photographer, now send to you (see Fig. 3).

Of course, it sometimes happens that a patient is too ill to leave his room, for it must be borne in mind that patients in all stages of pulmonary tuberculosis are accepted. In that case there is a special pan warmed by electricity in each bedroom on which food may be placed and kept warm. Throughout electricity, generated on the estate by the use of water power, is employed. Everything is done to avoid fires that produce smoke, for this does not improve the atmosphere. One or two furnaces for the machinery, the steam laundry, &c., exist and these furnaces are also of use as destructors. The method of dealing with the sputum is

FIG. 3.

Kiosk at Nordrach containing the only shop.

simple and effective. An ordinary metallic pail is employed. A newspaper is opened out and placed so as to line the sides of the pail. A certain quantity of sawdust is put into the paper and on this sawdust the spittoons are emptied. The newspaper is closed over the sawdust, lifted and dropped bodily into the furnace, where it is instantly consumed.

Such are some of the main and characteristic features of this sanatorium. From this description it will be easy to see that there is no sort of resemblance between the treatment received by the unfortunate patients at Sandgate and that which is given at Nordrach Colonie.[1]

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Proposed Labour Colony.

A PUBLIC meeting was held a few days ago under the auspices of the Citizens Committee to consider the question of a labour colony for Birmingham and district. The subject has been prominently before the public ever since Mr. Fels offered the guardians land for the purpose. The establishment of such a centre is recommended on the ground that it will enable the Poor-law authorities to provide that employment for the men which, by leading to their physical and moral improvement, will most probably result in their eventually becoming self-supporting. Other advantages claimed for the scheme are that derelict land might be reclaimed by derelict labour and that it would render easy the distinction between those who are and those who are not willing to work. It is admitted that in all probability the colony will be run at a loss financially. A resolution was passed at the meeting urging the guardians to establish as soon as possible a labour colony for Birmingham on lines similar to those at the Poplar colony.—The representatives of the Birmingham, Aston, and King's Norton boards of guardians who were deputed to pay a visit of inspection to the latter colony have issued their report. Without committing themselves to the adoption or the rejection of the scheme they have agreed to gather information as to the

[1] A correspondent points out in another column that possibly the John Jones Homes are supposed by the proprietors to represent certain so-called Volk's Sanatoriums in Nordrach village and elsewhere. This does not appear to us very probable, but giving the Sandgate Homes the benefit of the doubt the fact remains that Folkestone and Sandgate are not villages but constitute a popular and populous seaside resort.—ED. L.

number and the class of men suitable for such a colony that the three boards have to deal with and to hold a conference to consider such information.

Medical Men and School Certificates.

At the last meeting of the Dudley education committee Mr. M. A. Messiter attended as a deputation from the Dudley division of the Birmingham branch of the British Medical Association in reference to the payment by the committee for medical certificates. He remarked that as the law now stood parents were compelled to produce medical certificates in cases of non-attendance of children through illness. Medical men were constantly asked by poor parents to supply these certificates and received no remuneration for the work. Most boroughs in the county were paying for these certificates and he asked that the Dudley authorities should follow their example. The matter was referred to a committee.

The New Dietary Tables at the Solihull Workhouse.

An interesting statement made by the workhouse master at the last meeting of the Solihull board of guardians was that under the new dietary tables, by which each inmate was allowed as much bread as he required instead of a certain fixed weight, there had been a saving of 2033 pounds of bread during the last six months. At the same meeting it was decided to call the children's cottage home which has lately been built "The Woodlands," in order that no pauper taint should be borne by the children living there. The annual return for the board showed that there had been a decrease in the number of paupers from one for every 58 of the population in 1895 to one for every 61 in 1904. The number of pauper lunatics had, however, doubled in the ten years.

The Teaching of Sanitation.

At the last meeting of the Birmingham education committee the report of the technical education and evening schools subcommittee was presented, which recommended the establishment at the municipal technical school of a course of instruction in practical sanitation, together with the formation of a sanitary body to supervise such teaching. Dr. A. D. Heath, in presenting the report, remarked that in Birmingham and the district there were 120 sanitary authorities. There was a great demand for instruction in sanitary science and no machinery at all in the Midlands for meeting the demand.

The Feeding of School Children.

The Order issued by the Local Government Board to the boards of guardians concerning underfed children has been received in Birmingham. It is estimated that there are no less than 6000 such children in the city. The only views I have so far heard expressed are that police-court summonses would be more expeditious than county-court summonses and that the carrying out of the Order will prove an expensive matter unless the teachers are utilised for obtaining the necessary information.

May 2nd.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Death of Dr. J. E. Dutton.

THE sad intelligence of the death of Dr. J. E. Dutton at Kosongo in the Congo reached Liverpool on April 27th. The deceased gentleman was actively engaged in the investigation of trypanosomiasis and tick fever at the time of his death.

Liverpool Port Sanitary Authority: Last Year's Work.

The report for 1904 of Dr. E. W. Hope, medical officer of health to the port sanitary authority of Liverpool, speaks of the careful inspection made of ships which arrived during the 12 months from ports in the East infected with plague, cholera, and small-pox, and of the directions given for cleansing and disinfecting the vessels. Rats play an important part in the dissemination of plague, and during the year 4632 were caught on board 139 ships and examined bacteriologically. Experience in recent years shows that if ordinary precautions are taken the risk of the spread of plague in European ports is very small, probably no greater than in the case of small-pox. Plague is still prevalent in many parts of the world. In Europe no extensive outbreak had occurred during the year. Comparatively few cases of small-pox arrived in the port during the year. The infectious cases landed during the year numbered 99, being exactly the same number as in the previous year. 3522 vessels were inspected, an increase of 520 over the previous year. On board these vessels 4821 nuisances were discovered, 64 per cent. of which were due to inattention to cleanliness. The number of emigrants who sailed from the port was 274,584, of various nationalities. Only 36 out of that large number were found to be suffering from infectious disease, such as children affected with measles, scarlet fever, and chicken-pox. The number rejected on account of non-infectious sickness was also small and the temporary ailments from which emigrants suffered and which resulted in postponement of their journey do not call for special comment. 15 cases of beri-beri which were discovered were treated in the tropical ward of the Royal Southern Hospital.

Death from Cerebro-spinal Meningitis.

An inquest was held on April 22nd on the body of a tailor's cutter who died at the Royal Infirmary on April 16th. According to the evidence of the widow of the deceased it appeared that on March 16th he had had a dispute with his employer's son who dragged him round the shop and shook him. On the way home he had felt too weak to walk and had to be assisted by a friend. The following morning he complained of weakness and pains in the head. Corroborative evidence was given by the tailor's manager as to the struggle. Mr. J. D. McFeely gave a brief history of the symptoms of the case up to the date of the deceased's removal to the Royal Infirmary. He had complained frequently of pains in the left ear and there was a slight tendency to inflammation of the brain. When he recommended his removal to hospital he considered that an abscess was at the root of the trouble. Dr. Hick, house surgeon at the Royal Infirmary, said that when the deceased was admitted to hospital it was agreed by his senior colleagues that he was suffering from meningitis of the brain and spinal cord. A post-mortem examination revealed the fact that death was due to cerebro-spinal meningitis. There were no signs of injury. Cases of this sort had usually no relation to injury and arose from infection admitted through the nose. In reply to the coroner, Dr. Hick said that it was similar to the disease imported from America and that the post-mortem examination did not reveal an abscess at the left side of the brain. A verdict in accordance with the evidence of Dr. Hick, ascribing death to cerebro-spinal meningitis, was agreed upon, the jury adding that there was no evidence to show whether it was due to an injury or to an abscess set up by an injury. At the meeting of the health committee on April 27th Alderman Grant asked Dr. Hope, the medical officer of health, whether he had any information regarding the case of supposed "spotted fever" which occurred at the Royal Infirmary. Dr. Hope pointed out to the committee that the name "spotted fever" was rather a loose term and was applied to a variety of diseases, including typhus fever, which, of course, was highly infectious and one from which Liverpool was, unfortunately, seldom, if ever, entirely free. With regard to the disease which had been prevalent in New York they had no experience of it at all. The term cerebro-spinal meningitis was applied to the disease which the name implied—inflammation of the membranes of the brain and spinal cord. Cases occurred year by year; he had no recollection of a year passing without a death from it. It had no connexion, so far as he knew, with the disease which had been prevalent in New York.

Leigh Infirmary: Laying the Foundation Stone.

The foundation stone of the Leigh Infirmary was laid on April 29th by Alderman Greenough in the presence of a large gathering. The site of the hospital is situated on the Atherton and Tyldesley side of Leigh within a few minutes' walk of the centre of the town. The site is three and a quarter acres in extent, about two and a quarter acres having been generously given by Lord Lilford and the remainder was leased from his lordship. There would thus be space for 40 beds in wards of one storey or 120 beds in wards of two storeys. The present scheme provided for a two-storeyed ward to contain 15 beds for men and 15 beds for women and children. In the administrative block the out-patient department would be temporarily housed. Alderman Greenough announced that he had that day received promises of about £250 in subscriptions, &c., and as an earnest of his sympathy with the movement he would give a further £500 to the endowment fund. The donations to the infirmary at present reach the sum of £11,000. In the evening 35 guests were entertained at dinner by Alderman Greenough. It was stated

that in order to provide for the maintenance of the infirmary an effort would be made to get the 14,000 Leigh workpeople to subscribe 1*d.* a week each, as was done at Wigan, where £800 were received annually in this way. The £750 now subscribed from the Leigh collieries to the Wigan Infirmary will probably be diverted to the Leigh Infirmary.

May 2nd.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

West Wales Sanatorium.

AT the meeting which was held at Cardiff in 1901 for the purpose of establishing a branch of the National Association for the Prevention of Consumption and Other Forms of Tuberculosis for South Wales one of the most enthusiastic supporters of the scheme was Dr. Douglas A. Reid, the medical officer of health of Tenby, and he was so successful in inspiring his neighbours with a similar enthusiasm that very shortly afterwards a branch of the association was formed for the three western counties of Carmarthen, Pembroke, and Cardigan, where at the census of 1901 there was a population of 284,311 persons. The necessity for taking steps to combat the disease in these counties is forcibly demonstrated in the last annual report of the Registrar-General. In this report Dr. J. F. W. Tatham, in his letter to the Registrar-General on the causes of death, says: "In the report for 1902 allusion was made to the high phthisis mortality prevailing in parts of Wales ..... The present report shows that in the succeeding year phthisis was much more fatal among both sexes in Carmarthenshire, Pembrokeshire, and Cardiganshire than it was in the remaining counties of the South Wales group. After correction for age and sex the death-rate in these three counties together was equal to 1855 per million among males and to 1601 among females, both of these rates being considerably in excess of the corresponding rates for England and Wales (1427 and 993) and still more in excess of the average rate in the remaining counties of this group." The prevalence of the disease is still more striking when the records of each county are dealt with separately. Taking both sexes together the rate in Carmarthenshire was equal to 1487 per 1,000,000, in Pembrokeshire to 1536 per 1,000,000, and in Cardiganshire to 2121 per 1,000,000, this last being a higher rate than that which prevailed in any of the other English or Welsh counties. Very soon after the formation of the West Wales branch of the National Association it was decided to erect a sanatorium and a scheme was drawn up to provide accommodation for 28 patients, of whom 20 should pay 10*s.* weekly and the remainder a larger sum. The lords lieutenant of the three counties and of Haverfordwest, which is a separate lieutenancy, took an active part in securing funds and have been appointed trustees of any moneys collected. Several sites more or less suitable were offered by various landowners, some of whom placed any portion of their estates at the disposal of the selecting committee, and eventually one of 14 acres was chosen and has been leased for 999 years from Colonel Davies-Evans, the lord lieutenant of Cardiganshire, at a yearly rental of £11. It is situated in Carmarthenshire overlooking the vale of the Teivy and is about three miles from Llanybyther railway station. It has a sandy soil on shale and rock and is at a height of 848 feet above sea level. There are an abundant supply of water and a large number of trees. On April 26th H.R.H. Princess Christian laid the first stone of the proposed buildings upon which it is anticipated about £7000 will be expended. Already nearly £5000 have been promised towards this sum and the three county councils have been asked to make contributions from the county funds. On April 25th the Cardigan council decided to contribute £500 and to make an annual grant of £150 on condition that the council should have two members on the board of management and the right to nominate two patients to free beds. The other councils have not yet come to any decision in the matter.

Carmarthen Asylum.

The rate to be charged during the current six months for the maintenance of pauper lunatics in the three counties asylum at Carmarthen has been fixed at 9*s.* 0½*d.* per head weekly.

The Medical Officer of Health of Gloucester.

When Dr. John Campbell a few months ago resigned his position as medical officer of health of the city of Gloucester the corporation decided that his successor should devote his whole time to his official duties and proposed to pay a salary of £400 per annum for the combined posts of city medical officer of health, superintendent of the infectious diseases hospital, and medical officer of health to the port sanitary authority. The Local Government Board, however, refused to sanction a less salary than £500, with the result that the council resolved to permit private practice and to give a salary of £250. There were 26 applicants for the appointments and two appeared before the council on April 26th, when Mr. William M. Hope, who has practised in the city for 15 years, was elected by 26 votes to 9.

Health Report for Bath.

The medical officer of health of the city of Bath (Dr. W. H. Symons) states in his annual report that the corrected death-rate during 1904 was 13·3 per 1000 and the infantile mortality rate 111 per 1000 births. Although the deaths among young children are fewer than in many parts of England Dr. Symons thinks that a still greater reduction might be made and refers to the good work which is being done elsewhere by female inspectors one of whom might be usefully employed in Bath. There were 45 deaths from pulmonary tuberculosis, a disease which is voluntarily notifiable in Bath, 76 cases thus coming to the notice of the medical officer of health during the year.

Plymouth Lunatic Asylum.

At a special meeting of the visiting committee of the Plymouth Lunatic Asylum, held on April 28th, it was reported that the two new wings, which will provide accommodation for 140 patients, are now practically complete. The cost of the building has been about £26,000. The committee decided to proceed at once with the erection of a new storey (to contain 60 beds) over the existing building. The cost of this is estimated at £6000. When the entire scheme is completed the asylum will have accommodation for 400 patients.

May 3rd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Graduation Ceremony at Glasgow.

THE graduation ceremony at the University of Glasgow took place on April 18th in the Bute Hall before a crowded audience. As is usual at this time there were no candidates for the degrees of M.B., Ch.B., as the great bulk of the medical students come up for degrees at the summer graduation ceremony, but the degree of M.D. was conferred upon four graduates. The honorary degree of LL.D. was conferred, among others, upon Professor A. Crum Brown of Edinburgh and Sir William Whitla of Belfast.

Kilmun Seaside Homes.

These homes, conducted by the Glasgow Abstainers' Union, after renovation and extension at a cost of £2500, have recently been reopened by Sir John Ure Primrose, Lord Provost of Glasgow.

The Glasgow Hospital Sunday Fund.

This fund has recently been divided amongst the hospitals. The total amount collected during the past year was £4801 8*s.* 9*d.* and the average amount per church was £10 19*s.* 4*d.* The sum was allocated as follows: Royal Infirmary, £2174 9*s.* 11*d.*; Western Infirmary, £1713 17*s.* 3*d.*; and Victoria Infirmary, £651 13*s.* 3*d.* The chairman, in moving the adoption of the report, referred to the possibility of infirmaries taking in paying patients at a more moderate scale than could be obtained in private homes and pointed out the difficulties which would arise if this were done. At the same time he acknowledged how largely and munificently the working people contributed to the funds of the infirmaries.

The Glasgow Maternity Hospital.

This charity is making an appeal for subscriptions in order to enable the board to proceed with the scheme for enlarging the hospital. The directors have already got £30,000, but £80,000 are needed to complete the alterations. This appeal will no doubt commend itself to all who have any knowledge of the work done in the Maternity Hospital. Quite apart from its value as a charitable institution its position as a hospital for the teaching of practical obstetrics demands that

adequate accommodation should be found for the cases and for teaching purposes. In a city which is unfortunately notorious for the prevalence of rickets one would expect that complicated cases of labour among the lower classes would be very frequent, and the statistics of the hospital bear this out. This fact, together with the number of patients who are admitted each year, renders the hospital of great value in the training of students and nurses. When the requisite money is forthcoming and the new buildings are erected the hospital should take its position as a teaching school second to none of its kind in the United Kingdom.

The Diagnosis of Insanity.

That there is sometimes considerable difficulty in certifying as insane a patient whose morbid characteristics are not present in any very marked degree will be denied by few practitioners of any experience. It is interesting to note that this difficulty is shared, at least in some cases, even by experts in psychological medicine. A petition which recently came before the sheriff court at Glasgow illustrates the divergence of opinion which may arise in such a case. The case in point was that of a young married woman who had been convicted of theft. The procurator-fiscal petitioned the sheriff to declare that she was of unsound mind and a danger to the lieges and that she be handed over to Govan parish council to be detained in an asylum. On behalf of the petition he brought forward three expert witnesses to certify that she was a dangerous lunatic. The parish council, on the other hand, took up the position that the case was an attempt on the part of the Crown to get rid of its liability. The woman was arrested on the charge of theft and if she was merely insane the Crown would require to keep her. The Crown, however, tried to make out that she was a dangerous lunatic and to saddle the monetary responsibility on the parish council. On behalf of the parish council the superintendent of Hawkhead Asylum stated that the woman had been a patient in the asylum but was dismissed cured in November, 1904. While under treatment she had showed no signs of violence and, in his opinion, although weak-minded, she was not at present insane. After a lengthy debate the sheriff dismissed the petition reserving the question of expenses.

Nairn Hospital.

A meeting of the directors of the Nairn Town and County Hospital was held on April 27th, Mr. J. S. Robertson, the chairman, presiding. A discussion took place on the question of a sewage connexion to the town sewer from the new hospital buildings. Some time ago the directors applied to the town council for a connexion, an application which was granted on condition that the directors would pay for the laying of a storm overflow pipe at Church-street and that the town council would have the right to make connexions on the pipe proposed to be laid between the hospital and the town sewer. The directors afterwards withdrew this application and submitted another, asking for a private connexion and also asking the council to withdraw its condition as to a storm overflow pipe. The council agreed to withdraw the condition as to the overflow pipe but adhered to the previous condition that it should have the right of connexion with the hospital sewer. The chairman moved that they should again approach the town council asking it to withdraw this condition also. He thought it was rather hard on a charitable institution such as the hospital that the town council should impose such a condition when the hospital committee would have to spend about £400 in laying this sewer. Mr. Donaldson, solicitor, seconded the proposal. Provost Dallas moved that the offer be accepted. He thought it would be absurd to expect the town council to grant such a connexion to its main without attaching any conditions to it. What interest, he asked, could the directors possibly have in a pipe which was laid seven or eight feet below the ground? On the other hand, if the town council took it over the directors would be relieved of all responsibility. The provost's proposal did not find a seconder and the chairman's motion consequently became the finding of the meeting.

May 2nd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The General Medical Council.

ALTHOUGH the election of the Direct Representative for Ireland on the General Medical Council will not take place until next year, the question is exciting the greatest interest in medical circles and is being discussed all over the country at the various medical gatherings. Sir William Thomson, the present Direct Representative, will seek re-election and the only other candidate, up to the present, is Dr. L. Kidd of Enniskillen. The question mainly at issue is whether or not Dublin is to continue, as in the past, to supply the whole seven Irish representatives or are the provinces to be enfranchised (that is, to have a member to represent their interests). Already it is evident that Dr. Kidd will have an immense amount of provincial support and it is believed that a very large body of the profession in Dublin (both teachers in the schools and those unconnected with any of the colleges or licensing bodies), recognising the fairness of the claims of the provincial general practitioners, will support Dr. Kidd's candidature. There is also an important body in the electorate who, while not at this early period in the canvass committing themselves to any candidate, are agreed that they will support only a provincial member of the medical profession.

The Infectious Diseases Hospital, Belfast.

Several inhabitants of Windsor district, in Belfast, have presented a memorial to the Local Government Board asking it to direct the Belfast corporation to stop the construction of the sewage works for conveying the sewage of the infectious diseases hospital into the main drains of Belfast and to comply with the provisions of the Public Health Act by giving the statutory three months' notice in the public papers to allow objections to be lodged. It is also desired that the Board will direct the corporation before proceeding any further with the work to have the condemned ventilating traps in Balmoral-avenue (into which the sewage is proposed to be emptied) closed and ventilating shafts connected with the sewer erected at convenient places and at proper heights, or some other approved method of sewer ventilation, such as the Reeves system, which, it is said, works satisfactorily in Edinburgh and other large cities.

Queen's College, Belfast.

Professor J. W. Byers has been appointed to represent Queen's College, Belfast, at the International Congress of Obstetrics and Gynæcology to be held in St. Petersburg next September.

The Irish Medical Association.

At the coming general meeting of the Irish Medical Association, to be held in Killarney on June 7th, it has been decided that a scientific paper on a selected subject of interest to the great body of the profession be read, followed by a discussion. This is a great step in advance on the business of former meetings.

May 2nd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Nitrite of Amyl in Tuberculous Hæmoptysis.

AT the meeting of the Hospitals Medical Society which was held on April 14th M. Rouget read a paper dealing with the good effects to be obtained from the inhalation of nitrite of amyl in the hæmoptysis which occurs in the course of pulmonary tuberculosis, whether in the stage of consolidation or in that of softening. M. Rouget gave an account of the results obtained by this method in ten patients and they were remarkable. In one case the hæmorrhage could not be checked by any other remedy. The nitrite acts indirectly on the pulmonary circulation by lowering the blood pressure owing to its causing peripheral arterial dilatation. M. Rouget has employed this physiological action not merely to stop hæmorrhage but as a preventive, by administering it as soon as the warnings of an approaching hæmorrhage—namely, a disagreeable taste in the mouth and a feeling of oppression in the chest—are noticed.

Treatment of Gonorrhœal Arthritis of the Knee.

At the same meeting of the above society M. Queyrat discussed the treatment of gonorrhœal arthritis of the knee. In his opinion it is to aspiration and to the application of the actual cautery that we must look for the best method of obviating future ankylosis of the joint. He cited as an example the case of a man, aged 31 years, whom he had treated by aspiration followed immediately by the actual cautery. The joint was then enveloped in cotton-wool and the limb immobilised on a back-splint. Ten days later the cautery was again applied and within a very short time afterward

the joint was passively moved. Within 33 days from the commencement of the treatment the patient was well and could mount a bicycle.

Public Gardens.

The administrative committee of the Alliance d'Hygiène Sociale has just devoted a sitting, M. Casimir-Perrier being in the chair, to the consideration of a report by Dr. Letulle relative to public gardens and in particular to the use for this purpose of the dismantled fortifications of Paris and of other towns in the department of the Nord. The committee passed resolutions to the effect that every town should reserve within its boundary, or immediately outside it, large open spaces which should be used as playgrounds for both children and adults; that Parliament should not authorise the dismantling of the fortifications of a town unless a guarantee were given that the town would undertake to preserve the land thus set free as an open space which would benefit the hygiene of the town; and that at Paris in particular the city and the riverside parishes (*communes*) should profit by the dismantling of the fortifications and by the suppression of the *zone militaire*, to reserve large open spaces for laying out as public gardens. These resolutions also have been adopted by the Society of Public Medicine and of Sanitary Engineering.

Semi-resection of the Elbow-joint for Ankylosis.

At the meeting of the Society of Surgery which was held on April 12th M. Kirmisson gave an account of the case of a young girl on whom he had performed the above operation. She had complete ankylosis of the elbow-joint at a right angle. As she was a musician and was anxious to continue her piano and violin exercises M. Kirmisson proposed to resect the joint. Eventually, however, he only removed the olecranon and a portion of the articular surface of the lower end of the humerus (*apophyse humérale*). The result was excellent, the movements of the joint being almost as free as if it were normal.

Grafts from the Lining Membrane of Egg-shell.

At a recent meeting of the Therapeutical Society M. Amat read a paper upon the Use of the Lining Membrane of Egg-shell as a Skin Graft. M. Amat has for a long time past advocated the employment of this membrane and he brought two new cases to the notice of the meeting. The one was that of a young girl suffering from a wound of the foot consecutive to a burn and the other that of a man, aged 40 years, who had a large varicose ulcer of the leg. There was no suppuration and the wounds were covered with healthy granulations. Six or eight different grafts of egg-shell membrane were applied to the two ulcers respectively, the grafts being about one square centimetre in size. These were covered with tinfoil, both to fix them and to act as guide to their position. The whole was kept in position by a dry aseptic dressing. Four days later when the dressing and the tinfoil were removed there were seen two small opalescent points on the foot of the girl and three on the leg of the man. On the following day these points had sent out processes which reached to the epithelial borders of the ulcer. Five more grafts were placed on the foot of the girl but only one "took." M. Amat considered that the cicatricial process was much stimulated by the grafts. As egg-shell membrane is so easy to obtain it is a pity that its use is not more widely spread, more especially as the cicatrix obtained by its use is supple.

The Students and the Faculty of Medicine.

In consequence of the closing of the Paris Faculty of Medicine and of the events leading up to it which I have already described the committee of the general association of students has held a meeting. M. Liard, the vice-rector, has been approached by the president of this committee as well as by a deputation from the Association Corporative des Étudiants en Médecine, the object being to obtain the vice-rector's support to a petition which they were about to present to the Minister of Public Instruction, praying that the reception of theses and the final examinations for graduation might be proceeded with. On the advice of M. Liard the petition was submitted to the Minister of Public Instruction who immediately authorised the holding of two examinations for students whose cases were exceptional. The deputation having then presented to the dean of the faculty a list of ten candidates for whom it was of material consequence that their theses should receive consideration as soon as possible, M. Debove, the dean, immediately forwarded these requests, with his approval of them, to the vice-rector. The students, moreover, ask for certain modifications in the curriculum (*programme d'études*) and in the examinations—namely, that more importance should be given to medicine and less to accessory subjects, that the two chairs of physics and chemistry should be converted into two chairs of clinical medicine, that the system of paying fees for instruction in therapeutics should be abolished, and that the professors should be required to conduct their practical courses. The classes, which are arranged specially for students and for which fees are paid (*cours de perfectionnement*), have been resumed.

Reduction of Oxyhæmoglobin.

At a meeting of the Academy of Sciences held on April 10th M. Lépine and M. Bonlud said that in consequence of the statements which had been made as to the length of time required for the reduction of oxyhæmoglobin in a fatal case of surgical shock after prolonged anæsthesia they had undertaken a systematic research on the subject. They endeavoured to ascertain if the oxyhæmoglobin in different samples of abnormal blood was reduced in the same time by the same reducing agent (ferrous sulphate being used in each case) employed in an amount exactly proportional to that of the hæmoglobin. After numerous trials made with a view to the selection of a method they were able to establish the following facts. The time required for the reduction of the oxyhæmoglobin under the conditions of their experiments was about 20 minutes. In anæmia the time required for reduction (with a quantity of the reagent strictly proportional to the small amount of hæmoglobin in the blood) was greatly increased. M. Lépine and M. Bonlud have known it to exceed an hour. Prolonged inhalation of chloroform or ether also increased the time required for reduction. Infection of the blood with various microbes, including a very virulent staphylococcus, appeared to be without sensible influence.

May 1st.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Medical Progress in the Philippines.

AT the recent meeting of the Philippine Islands Medical Association many interesting facts appeared in regard to the progress of medical education and practice in that country. The first event of the meeting was the inspection of the new Government laboratory which was just completed. The building cost the insular Government $108,000 and is the most completely equipped building of the kind in any oriental country. The Secretary of the Interior, the Hon. Dean C. Worcester, under whose direction the building was erected, stated that "from a practical standpoint it was of the greatest economical value, because experience proved that until science had come to the rescue the white race had never been able to inhabit the tropics successfully and that much more work was required in this direction so that the danger might be still further reduced." He added that a great deal had been accomplished, especially with regard to health conditions, which made it possible for the white man to live in the tropics with almost the same security as he inhabited the temperate zone; particularly was this true if excesses were avoided and a clean moral life was followed. The statistics of Manila showed that the death-rate among the white race was 9 75 per 1000, while that of the natives was 53 per 1000. The Secretary was often distressed to see persons dying from diseases which would have yielded readily to medical or surgical aid had it been at hand; and even in Manila 50 per cent. of the deaths recorded occurred without medical attendance. Dr. John R. McDill delivered the president's address in which he said that, with the exception of some intestinal disorders which were being prevented, the treatment of the diseases met with was as successful as elsewhere when hospital care was available. Pride in the achievements of the insular board of health was shared in by the public and the profession alike. He regretted that while every effort had been made to get the coöperation and the participation of the native physicians in the meetings of the Medical Society thus far the effort had met with very limited success. The Filipino medical students had two striking characteristics, viz.: (1) the astonishing capacity to absorb and to expound theory; and (2) the fact that the ablest members of the profession

have always been among the foremost political leaders of their country. The time when they could expect their coöperation would, perhaps, come only when the generation which is now being educated came to the front. There are only about 360 duly licensed physicians in the islands and 217 of these are in Manila. These figures mean that while Manila has one physician for every 1013 inhabitants, in the provinces there is only one physician for every 51,786 persons, or, in other words, one medical man for each 430 square miles. The hope of the profession lies, in his opinion, in the establishment of a first-class medical school where the Filipinos may be properly educated.

Castration as a Preventive of the Propagation of Idiocy.

The legislature of the State of Pennsylvania has passed a Bill directed towards the prevention, by castration, of procreation on the part of idiots and imbeciles in public institutions. The governor of that State, however, has vetoed the measure, thus preventing the legalisation of this much-debated method of limiting the number of idiots. The Governor contends that the nature of the intended operation is not sufficiently described in the Bill, its only qualification being that it shall be the "safest and most effective" in the judgment of a neurologist, a surgeon and a physician. While he thinks the most effective method would be decapitation he doubts the popularity of that preventive measure. His real objection to the Bill appears when he states that men of science, like all other men whose experiences have been limited to one pursuit and whose minds have been developed in a particular direction, sometimes need to be restrained. The defect of such a law would, in his opinion, lie in the fact that a surgeon might possibly be so eager to advance in skill as to be forgetful of the danger to his patient.

Conference of American Anatomists.

The Wistar Institute of Anatomy of Philadelphia recently invited the leading anatomists of the United States to meet in conference with the managers of that institution. The objects of the conference were to discuss the advisability and means of organising central institutes for the promotion of research in the different subdivisions of anatomy, such as physical anthropology, comparative anatomy, topographical anatomy, embryology, histology, and neurology, and also to establish relations with similar institutes abroad. The Wistar Institute is splendidly equipped, has a broad plan of foundation, and is devoted to advanced work only, with no undergraduate teaching; hence it is proposed by anatomists to utilise this institution as an anatomical centre where committees may meet from time to time, the work be collated, and research material collected and prepared for investigation and sent about the country to qualified investigators. If the plan is carried out the institute will do for all the great universities of this country certain important lines of work which no other institution can attempt and carry to a successful conclusion.

Changes in the Teaching Staff of Johns Hopkins University.

The withdrawal of Professor Osler from the Johns Hopkins University has necessitated the reorganisation of its teaching staff. The Professorship of Clinical Medicine has been one of the most important chairs in the medical department and has been rendered famous by the teachings of Professor Osler. This position has been filled by the elevation of Dr. Thayer, a graduate of the university and an assistant of Professor Osler. Professor Thayer has been a successful worker in the field of clinical medicine and gives promise of maintaining the reputation of his department. The selection of Professor Lewellys Barker, the head of the department of anatomy in the University of Chicago, for the chair of General Medicine, is a surprise. Professor Barker has long had an enviable reputation as a worker in the field of anatomy and allied branches of science but is quite unknown in the department of general medicine. He has, however, all of the elements necessary to success in this new field of work and there is no doubt in the minds of his friends that he will not disappoint those who were instrumental in his selection. Previously to his appointment to the professorship of anatomy in the University of Chicago he was associate professor of anatomy in the Johns Hopkins University and assistant resident pathologist to the Johns Hopkins Hospital.

Eddyite Treatment is Adjudged to be the Practice of Medicine.

The Supreme Court of Ohio holds that the giving of "Christian Science" treatment for a fee for the cure of disease is practising medicine within the meaning of the statute regulating such practice in that State. The court says that the right to practise medicine has been so long and so universally subject to State regulation that it might almost be said to be not an absolute right but a privilege or franchise. Assuming that it is an absolute right it must be conceded to be subject to such reasonable regulations and conditions as the State in the exercise of the police power may prescribe. The court fails to find anything in the present Act that discriminates against Eddyism. It does not provide for a special examination and limited certificate for the Eddyite practitioner but he may obtain a certificate to practise medicine upon the same conditions as any other person and there is nothing in the Act requiring him to use the knowledge after he has acquired it. The statute provides that—

> Any person shall be regarded as practising medicine or surgery or midwifery within the meaning of this Act who shall ..... prescribe or who shall recommend for a fee for like use any drug or medicine, appliance, application, operation, or treatment, of whatever nature, for the cure or relief of any wound, fracture, or bodily injury, infirmity, or disease.

The court quotes from Dr. O. W. Holmes, the poet-physician, "Disease is to be treated by anything that is proved to cure it." The court concludes: "So that the use of the words 'of whatever nature' ..... are quite significant and this court has no doubt the legislative intent was to bring within this definition every person who for a fee prescribed or recommended a cure for disease, even though the cure was to come not from himself but, through his intercedence, from God."

April 24th.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

A New Scheme for the Supply of Water to Calcutta.

THE city of Calcutta during the last two years has been suffering from a deficiency of filtered water partly due to the installation of a constant in place of an intermittent supply, partly to wastage, and partly to increased requirements. It is estimated that about 20 gallons per head per day have been brought into the city. This supply is taken from the river Hooghly about 20 miles above Calcutta, is filtered at the works close by the intake, and is then brought into the city by iron mains. In consequence of the level ground a great deal of pumping has to be done to distribute it throughout the city and the pressure is so low that filtered water will barely reach the first floor of houses. To overcome these inconveniences it is proposed to have a huge raised storage reservoir to which a set of engines will be constantly pumping the water as it arrives from the mains and from this reservoir to distribute the water by the power of gravitation, thus doing away with three district pumping stations, obtaining greater pressure, and avoiding the dangers of the present district underground storage tanks. By the Municipal Act the constant supply must be established so that this change will be completed gradually. Meantime a larger quantity of water is being brought into the city by increasing the pressure in the mains from the waterworks. This increase, however, will not be sufficient for the new scheme, a further modification of which has just been proposed—viz., to do away with the subsidiary supply of unfiltered water and to substitute filtered water throughout the town. The latest scheme proposed by the chief engineer contemplates the erection of a 10,000,000 gallon reservoir and to supply 50 gallons per head per day instead of at present about 20 gallons. The supply of unfiltered water is considered a danger to the town. It probably is; but the danger from this source is infinitesimal compared with that from the thousands of filthy tanks (it is estimated that there are over 5000 tanks in the area of the city) which are used not only for washing clothes but for drainage of the privies from surrounding huts. Moreover, the natives go down in thousands to the river to bathe and to fetch the holy water and comparatively few have access to the unfiltered supply brought into the city for road watering and flushing purposes. The new scheme for more pure water is a grand one, not only from a sanitary point of view but in its engineering features. The expense, however, will be enormous and 50 lakhs of rupees will not cover it.

A Higher Record in Plague Mortality.

A further and still more terrible record in plague mortality throughout India is returned for the week ending

April 1st. There were 57,702 deaths and 65,789 cases were reported. Even this probably does not represent the whole truth. Last week 53,895 deaths were recorded. In the United Provinces 23,387 deaths occurred, in the Bombay districts 3056, in Madras districts 81, in Bengal 9703, in the Punjab 19,015, in Burma 72, in the Central Provinces 338, in the Mysore State 104, in the Hyderabad State 470, in Rajputana 1269, and in Kashmir 101. The latest weekly returns for Calcutta give 712 deaths.

The Instruction of Natives in First Aid to the Injured.

The recent demonstration in first aid to the injured held in Calcutta under the auspices of the local centre has shown that the natives of India can be usefully instructed in this work. There were competitions amongst native students who had been through the regular course of training and other competitions among the native constables who had been instructed in the junior course. All these competitions were keenly contested and were very creditably performed, but the general impression is that where real assistance is required native help would not be forthcoming. Perhaps the knowledge of what to do will give these competitors at any rate the necessary courage.

The Earthquake.

The terrible earthquake in Dhamsala and adjoining places has called for medical aid on a large scale. Some curious injuries are reported and, as usual, some miraculous escapes. The exhumation of buried bodies has been a great undertaking and the military have been called in to assist. The stench of the dead is described as having been very great as some time elapsed before removal could be effected. At Landour a house was moved bodily down the hillside and anchored safely on a ledge a short distance below, the inmates being quite unconscious of the sudden change. Many of the tea estates have been destroyed. Most of the injured have been more or less bruised by falling stones. People were in bed at the time and got crushed under falling roofs and walls. A succession of slight shocks followed the disastrous one.

April 14th.

Obituary.

JOSEPH EVERETT DUTTON, M.B., CH.B. VICT.

IT is with great regret that we announce the sudden death of Dr. Joseph Everett Dutton, Walter Myers Fellow of the Liverpool School of Tropical Medicine, at Kosongo in the Congo, on Feb. 27th, while actively engaged in the investigation of trypanosomiasis and tick fever. In 1903, Dr. Dutton, accompanied by Dr. J. L. Todd, proceeded to the Congo to investigate trypanosomiasis and other tropical diseases. Towards the end of 1904 they had reached Stanley Falls and independently they were able to demonstrate the cause of tick fever in man, a discovery made a few weeks previously by Ross and Milne in the Uganda Protectorate. Further, they were able to show the transference of the disease from man to monkeys by means of a particular species of tick. During these investigations both observers contracted the disease. A letter received from them in Liverpool was dated Kosongo, Feb. 9th, when they both appeared to be in excellent spirits and were on the return journey but since then the news of the sudden death of Dr. Dutton has reached this country through the Belgian Government, and later Baron Liebricht sent sincere condolences from the Congo Free State Government by telegram.

In the death of Dr. Dutton the Liverpool School of Tropical Medicine and the University of Liverpool have suffered the loss of a most brilliant graduate. Although quite young in years Dr. Dutton had already won a recognised position throughout the scientific world and as recently as last October Professor Koch, in an address before the anniversary meeting of the Berlin Medical Society, exhorted all nations to lend assistance to the work of combating trypanosomiasis in man so successfully conducted by the expeditions under Bruce, Dutton, and others. Educated at the King's School, Chester, he proceeded to the University of Liverpool, where he rapidly made his way and in 1897 he was appointed to the George Holt Fellowship in Pathology which gave him a much-desired opportunity for research. This fellowship, the first of its kind which was established at Liverpool, has proved of the greatest service in encouraging original study, for Dutton succeeded as Fellow Lieutenant S. R. Christophers, I.M.S., now Director of the King Institute of Hygiene, Madras, who held the fellowship in 1896; Dr. H. E. Annett, the present lecturer in comparative pathology in the University and superintendent of the Farm Station of the Liverpool Institute of Comparative Pathology, who held it in 1895; and Dr. E. E. Glynn, the present lecturer in clinical pathology, who held it in 1899.

After qualifying as M.B., Ch.B. Vict., Dr. Dutton acted as house surgeon to Professor Rushton Parker and house physician to Dr. R. Caton at the Liverpool Royal Infirmary and in 1901 he was elected to the Walter Myers Fellowship in the Tropical School. His first expedition to West Africa took place in 1900, when with Dr. Annett and Dr. Elliott of Toronto he visited Nigeria in order to study the bionomic of the anopheles and measures generally for the prevention of malaria. Two reports were issued as the result of this expedition, one dealing with anti-malaria sanitation and the other consisting of one of the most complete monographs upon filariasis hitherto published. In 1901 he proceeded alone to the Gambia and drew up a most comprehensive and useful report with regard to the prevention of malaria. During his stay in the colony he won to a remarkable degree the affectionate regard of all whom he met and in so doing contributed much to the success of his expedition. It was during this expedition that he identified in the blood of a patient of Mr. R. M. Forde, the medical officer of Bathurst, a trypanosome belonging to a group of animal parasites which had hitherto been only found in animals. He accurately described and named it. Subsequently he found the same organism in numerous other cases in the Gambia and elsewhere. It can hardly be doubted that this discovery of the first trypanosome in man by Dr. Dutton was an important factor in leading to the discovery of the cause of sleeping sickness, which was subsequently shown by other observers to be due to the same parasite. In addition to his discovery of trypanosoma Gambiense he also described several other trypanosomes new to science. In 1902 he proceeded with Dr. Todd to the Senegambia and drew up a report on sanitation which was presented to the French Government and further papers on trypanosomiasis were published. The present expedition to the Congo was sent out in 1903. Dr. Dutton was accompanied by Dr. Todd and Dr. C. Christy, the latter returning to England in June, 1904. It was evident by the last letter which they sent to the committee of the Liverpool School of Tropical Medicine that they had made many valuable observations whilst tracing sleeping sickness along the river banks and in their investigations upon the nature of tick fever and filariasis and no doubt the publication of these will soon follow.

It will be seen from this brief account of Dutton's career that although under 30 years of age he had accomplished much good and strenuous work and had advanced in a most striking manner our knowledge of certain departments of medicine. Medical science is deprived of one of its most promising younger men, the city of Liverpool of a most gifted student, and his colleagues in the University and the Royal Infirmary have lost one who combined with a great intellect a charming personality which made him beloved by all.

A special meeting of the Liverpool School of Tropical Medicine was held on May 1st, Sir Alfred L. Jones, K.C.M.G., being in the chair. The chairman, in feeling and sympathetic terms, expressed the great sorrow of the school at the premature death of so distinguished a man of science, and on his motion, which was carried unanimously, the following resolution was recorded:—

That the Liverpool School of Tropical Medicine desire to place on record their deepest sympathy with the relatives of the late Dr. J. E. Dutton at the premature death of that promising scientist whilst serving on the Congo expedition of the school. The school will never forget the devotion and courage with which Dr. Dutton repeatedly proceeded to the most unhealthy regions in West Africa on their medical research expeditions. Dr. Dutton served on the third expedition of the school, which visited Southern and Northern Nigeria in 1900; on the sixth expedition, which visited the Gambia in 1901; on the tenth expedition which visited Senegambia in 1902; since August, 1903, he had had charge of the twelfth expedition, which proceeded to the Congo to investigate trypanosomiasis, sleeping sickness, &c., in the course of which his lamentable death has now occurred. The valuable discoveries made by Dr. Dutton, especially that of identifying the trypanosome in man, will in the course of time prove of the greatest benefit to humanity and will be a lasting memorial to his skill and his self-sacrificing devotion in the cause of scientific research in the tropics. The school, together with the whole

of the scientific world, were confidently looking forward to a long period of usefulness, of which Dr. Dutton's short but brilliant career held out every promise. Apart from the loss to science they feel deeply the loss to themselves by the removal from their midst of his bright and enthusiastic personality.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen passed the second examination of the Board at the April quarterly meeting of the examiners in the subjects indicated :—

Anatomy and Physiology.—William Arthur Alexander, B.A. Camb., Cambridge University; Charles Henry Fairbank Atkinson, Charing Cross Hospital; Charles James Aveling, London Hospital; Bertram Frend Bartlett, University College, London; Alfred William Bevis, St. Mary's Hospital; Robert Stanley Capon, Liverpool University; Howard Bernard Carter and Thomas Evans, Guy's Hospital; James Aitken Clark, William Deane, and Eric Leigh Fyffe, St. Thomas's Hospital; Mohan Nath Kedarwath Dikshit, L.M. & S. Bombay, Grant Medical College, Bombay; Eric Gerald Gauntlett, King's College, London; William Gilliatt, Middlesex Hospital; John Maximilian Hammond, University College, Bristol, and St. Bartholomew's Hospital; Frank Thompson Hancock, M.R.C.V.S., St. Bartholomew's Hospital; Arthur Tease Jackson, Robert Henry Hatten Jolly, and Thomas William Jones, Charing Cross Hospital; Arthur Reginald Hardy, Manchester University; John Edward Lionel Johnston, St. Mary's Hospital; Robert John Jones, St. Mungo's College, Glasgow; George Frederick Jotham, Birmingham University; Percy Lang and Alfred Miles, St. Bartholomew's Hospital; Arthur Norman Leeming, Guy's Hospital; Oswald William McSheehy and Max Herschel Edward Richard Montesole, St. Thomas's Hospital; Malcomson Knox Nelson, Queen's College, Belfast, and Guy's Hospital; Donald North, Leeds University; Herbert Edward Perkins and Cyril Macdonald Plumptree, Guy's Hospital; William Joseph Petty, William Edgar Roberts, and Alfred Samuel, University College, Cardiff; Edward John Joseph Quirk, Charing Cross Hospital; Percy Charles Raiment, and James Stanley Robertson, London Hospital; Rowland Waters Rix and Hubert Alan Hirst Robson, St. Thomas's Hospital; Arthur Frederick Sanderson, St. Thomas's Hospital; Francis Charles Searle, St. Bartholomew's Hospital; Reuben Shackanovis, B.Sc. Vict., Leeds University; Edward Philip Stibbe, and Washington Everitt Wilks, Charing Cross Hospital; Charles Henry Shorney Webb, Middlesex Hospital; and Henry Adrian Fitzroy Wilson, St. Thomas's Hospital.

UNIVERSITY OF OXFORD.—The degree days for the ensuing terms are as follows :—In Easter term : Thursday, May 4th, and Thursday, May 25th. In Trinity term : Thursday, June 22nd, Thursday, June 29th, and Saturday, July 8th. The following have received the degree of Doctor of Medicine :—

Owen William Richards, New College; and Oscar Hildesheim, Magdalen College.

Examinations for scholarships and exhibitions in natural science are announced as follows : May 2nd, Merton College and New College ; and July 4th, Brasenose College.

UNIVERSITY OF CAMBRIDGE.—The following candidates who have passed both parts of the examination in sanitary science have received the University Diploma in Public Health :—

D. G. Advani, R. Ahern, C. A. Bentley, I. D. Cameron, C. J. Coleman, J. W. Cornwall, T. S. Elliot, H. B. Fawcus, C. Fisher, T. B. Hegga, A. R. Jones, H. G. Jones, E. W. Routley, A. M. Simpson, J. B. Thackwell, and D. B. Waters.

At a Congregation held on April 27th the following degrees were conferred :—

Doctor of Medicine.—S. P. Pollard, Caius; and W. L. H. Duckworth, Jesus.

Bachelor of Medicine.—F. W. M. Palmer, Jesus.

UNIVERSITY OF DURHAM : FACULTY OF MEDICINE.—At the Convocation held on April 29th the following degrees and diplomas were conferred :—

Doctor in Medicine.—Anthony Bourchier Bradford, M.B., B.S. Durh.; Annie Tombleson Brunyate, M.B., B.S. Durh.; John Wilfrid Caton, M.B., B.S. Durh.; Thomas Morrison Clayton, M.B., B.S., B.Hy., D.P.H. Durh.; Flora Murray, M.B., B.S. Durh.; Alfred Henry Proctor, M.B., M.S. Durh.; Oswin Shields, M.B. Durh.; and Thomas Christoffel Visser, M.B., B.S. Durh. (*in absentia*).

Doctor in Medicine for Practitioners of 15 years' standing.—James Kynaston Couch, M.R.C.S., L.R.C.P.; Louis Demetriadi, F.R.C.S.E., L.K.Q.C.P. Irel., L.F.P.S. Glasg., D.P.H.; Herbert Edward Deane, M.R.C.S., L.S.A.; Frederick William Lewitt, M.R.C.S., L.R.C.P.; John Alfred Ward, M.R.C.S., L.R.C.P., L.S.A.; and Francis Henry Weekes, M.R.C.S., L.S.A.

Bachelor in Medicine (M.B.).—Dudley Thomas Birt and James Alexander Bennett, College of Medicine, Newcastle-upon-Tyne; John Frederick Bridge, Birmingham University; William Henry Hugh Croudace and Lillie Johnson, B.Sc., College of Medicine, Newcastle-upon-Tyne; Frederick William Kemp, St. Bartholomew's Hospital; Bernard Warner Lacey, Guy's Hospital; Thomas William Maddison, College of Medicine, Newcastle-upon-Tyne; Aurelius Victor Maybury, M.R.C.S., L.R.C.P., Guy's Hospital; Andrew Banks Raffle and Charles Duncan Relton, College of Medicine, Newcastle-upon-Tyne; Leslie Martin Rosten, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital; Olga Alberta Schiele, London School of Medicine for Women and College of Medicine, Newcastle-upon-Tyne; Alan Ayre Smith, M.R.C.S., L.R.C.P., Guy's Hospital; and Ernest Charles Young, St. Mary's Hospital.

Bachelor in Surgery (B.S.).—Dudley Thomas Birt, James Alexander Bennett, William Henry Hugh Croudace, and Lillie Johnson, B.Sc., College of Medicine, Newcastle-upon-Tyne; Frederick William Kemp, St. Bartholomew's Hospital; Bernard Warner Lacey, Guy's Hospital; Thomas William Maddison, College of Medicine, Newcastle-upon-Tyne; Aurelius Victor Maybury, M.R.C.S., L.R.C.P., Guy's Hospital; Andrew Banks Raffle and Charles Duncan Relton, College of Medicine, Newcastle-upon-Tyne; Leslie Martin Rosten, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital; Olga Alberta Schiele, London School of Medicine for Women and College of Medicine, Newcastle-upon-Tyne; Alan Ayre Smith, M.R.C.S., L.R.C.P., Guy's Hospital; and Frederick Spicer, M.D. Durh., M.R.C.S.

Bachelor of Hygiene (B.Hy.).—Kurunthotical Thomas Matthew, L.M. & S. Madras, D.P.H. Cantab., L.R.C.P. & S. Edin.

Diploma in Public Health (D.P.H.).—George Fitzjames Darker, M.R.C.S., L.R.C.P., John Charles Venniker, M.D., B.S. Durh., and James Maclanachan Ferguson, L.R.C.P. & S. Edin.

MEDICAL MAGISTRATE.—Mr. William Jackson, M.D. Brux., D.P.H. Cantab., L.R.C.P. Edin., barrister-at-law, has been placed upon the commission of the peace for the borough of Nelson, Lancashire.

VITAL STATISTICS OF ST. VINCENT.—Mr. E. J. Cameron, Administrator of the Island of St. Vincent, in his report on the colony for the year 1904 quotes the following figures. The population at the 1891 census was 41,054. By the estimate of the Registrar-General the population at March 31st, 1904, was 48,424. The births registered in 1903–04 were 1518—760 male and 758 female—as against 1551 in 1902. Of these 836, or 55·07 per cent., were illegitimate. Stillbirths were 119, 42 legitimate and 77 illegitimate, the figures being, curiously enough, all precisely the same as for the year 1902. Marriages appear to be appreciably on the increase, there having been 66 in the first quarter of 1903, against 30 in the similar period of 1902, and 241 in the year 1903–04, as against 226 in the calendar year 1902. The total registered deaths were 875, being 18·07 per 1000 of the estimated population. The infant mortality (infants under one year exclusive of stillbirths) was 222, being about 25 per cent. of the whole. If the death-rate may be taken as an index of the public health then 1903–04 was an exceptionally healthy year, the number of deaths registered being 52 below the average of the preceding years, which was 927. Ankylostoma, syphilis, and intestinal parasites are the three great evils with which the medical staff have to contend. Malaria was severe in certain localities and there was also an epidemic of whooping-cough. The peculiar form of small-pox, to which the hybrid designation of "varioloid varicella" was given, was introduced from Trinidad, but fortunately was prevented from spreading. After an experience of 23 years, which embraces every single one of the British insular colonies in the West Indies and several foreign ones, Mr. Cameron is inclined to set down St. Vincent as the healthiest and pleasantest in climate of all for the European dweller who has to spend two or three years at a stretch in one place without a break. There is nothing special under the head of sanitation to call attention to. In the villages of the peasantry the ideas and methods in sanitary matters are elementary in the extreme. In the towns things are passable but could be much improved if there were money to lay out. On the whole, however, there are no glaring evils. The number of patients treated at the Colonial Hospital during the year 1903–04 was 1014, of whom 897 were discharged cured or relieved, 15 were discharged not improved, 50 died, and 52 remained in hospital. The daily average was 61·38. The admission figure for 1903–04 was 967, the highest yet recorded. It included 239 cases of ankylostoma. There were also 266 operations performed, exclusive of teeth extractions, catheterisations, &c. A portion of the old military barracks at Fort Charlotte is set aside for temporary detention of lunatics prior to their removal to the asylum at Grenada. There were 17 cases under treatment during the year (nine being new admissions), of whom two were discharged cured, two died, and six were transferred to the asylum at Grenada. The total number of St. Vincent lunatics under care there was 32. The number of inmates of the leper asylum on March 31st, 1903, was 13 ; three fresh cases were admitted during the year 1903–04. The medical officer who has this institution under his care writes : "The inmates are steadily

decreasing in number. Two who were merely syphilitic and had recovered were discharged. One case of anæsthetic leprosy who had recovered was allowed to go home and one case of doubtful diagnosis was also allowed to go. There is no compulsory segregation nor is any attempt made to collect all the lepers of the colony in an asylum. It will shortly be a matter for consideration whether it be worth while continuing this institution. It will be cheaper to afford outdoor help to the few lepers now there and close the building."

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

A Small-pox Return.

SIR JOHN BATTY TUKE intends to ask next week for a return showing each port or other sanitary district in England and Wales exclusive of any district wholly or partly in London) in respect of which during the year ended March 25th, 1905, cases of small-pox have been reported to the Local Government Board; the number of such cases; and also, where the number reported has exceeded 100, the estimated amount of the expenditure incurred by the sanitary authority in consequence of the occurrence of such cases.

HOUSE OF COMMONS.

TUESDAY, MAY 2ND.

Homes for Inebriates.

Mr. PURVIS asked the Home Secretary whether he could state the number of homes established under the Inebriates Acts, 1898 and 1899; what was the present capacity of such homes; and the total number of inmates on March 31st last.—Mr. AKERS-DOUGLAS replied: Under the Inebriates Acts, 1898 and 1899, two State inebriate reformatories and 12 certificated inebriate reformatories had been established prior to March 31st last. These institutions contained 1112 available beds and 876 inmates on the date mentioned. 200 of the unoccupied beds were in newly established institutions. Another certificated reformatory with accommodation for 80 persons has just been opened. Besides these reformatories, which are for persons committed from the courts, there are 19 retreats licensed under the Habitual Drunkards Act, 1879, which provide accommodation for 544 voluntary cases.

BOOKS, ETC., RECEIVED.

APPLETON, SIDNEY, London.

From Tokio through Manchuria with the Japanese. By Louis Livingston Seaman, M.D., LL.B., Major and Surgeon, U.S.V., in the Spanish-American and Philippine Wars, and with the Allied Armies in the Boxer Campaign in China. Price 6s. net.

BLAKELEY, E. H., 11, Adam-street, Strand, W.C.

The Diagnosis and Treatment of Some of the Common Diseases of the Rectum and Anus. By Cecil H. Leaf, M.A., M.B. Cantab., F.R.C.S. Eng., Surgeon to the Cancer Hospital and the Gordon Hospital for Rectal Diseases. Price 3s. 6d.

BRIMLEY JOHNSON AND INCE, LIMITED, London and Edinburgh.

The Shilling Library of Psychical Literature and Enquiry. III. Automatic Speaking and Writing: a Study. By Edward T. Bennett. Price 1s.

CHAPMAN AND HALL, LIMITED, London.

The Principles of Heredity, with Some Applications. By G. Archdall Reid, M.B., F.R.S.E., Author of "The Present Evolution of Man," "Alcoholism: a Study in Heredity," &c. Price 12s. 6d. net.

CHURCHILL, J. AND A., 7, Great Marlborough-street, W.

A Short Practice of Midwifery for Nurses, Embodying the Treatment adopted in the Rotunda Hospital, Dublin. By Henry Jellett, B.A., M.D., B.Ch., B.A.O. (Dublin University), F.R.C.P.I., L.M., Gynæcologist and Obstetric Physician to Dr. Steevens' Hospital, Dublin, Extern Examiner in Midwifery, Royal University of Ireland. Second edition, revised. Price 6s. 6d. net.

A System of Clinical Medicine dealing with the Diagnosis, Prognosis, and Treatment of Disease. For Students and Practitioners. By Thomas D. Savill, M.D. Lond., Physician to the West-End Hospital for Diseases of the Nervous System. Vol. II. Certain General Disorders; Diseases of the Skin and the Nervous System. Price 8s. 6d. net.

Paralysis and Other Diseases of the Nervous System in Childhood and Early Life. By James Taylor, M.A., M.D., F.R.C.P., Physician for Out-patients to the National Hospital for the Paralysed and Epileptic, Queen-square. Price 12s. 6d. net.

Psychological Medicine. A Manual on Mental Diseases for Practitioners and Students. By Maurice Craig, M.A., M.D. Cantab., M.R.C.P. Lond., Physician for and Lecturer on Mental Diseases, Guy's Hospital. Price 12s. 6d. net.

EYRE AND SPOTTISWOODE, East Harding-street, E.C.

The Law Relating to Factories and Workshops (including Laundries, Railways, and Docks). Part I. A Practical Guide to the Law and its Administration. By May E. Abraham (Mrs. H. J. Tennant), formerly one of Her late Majesty's Superintending Inspectors of Factories. Part II. The Acts, with Notes, containing the Factory and Worshop Act, 1901; The Shops Regulation Acts, 1892 to 1904; The Truck Acts, 1831, 1887, and 1896; Other Acts and Parts of Acts relating to Factories and Workshops; with Explanatory Notes, by Arthur Llewelyn Davies, of the Inner Temple, Barrister-at-Law. With an Appendix containing a Full List of Regulations made for Dangerous Trades, and of Orders made by the Secretary of State, and a Complete Index to both Parts. Fifth edition. Price 5s.

F. A. DAVIS COMPANY, 1914-16, Cherry-street, Philadelphia.

Practical Pediatrics: A Manual of the Medical and Surgical Diseases of Infancy and Childhood. By Dr. E. Graetzer, Editor of the "Centralblatt für Kinderheilkunde" and the "Excerpta Medica." Authorised translation, with Numerous Additions and Notes, by Herman B. Sheffield, M.D., Instructor in Diseases of Children and Attending Pediatrist (O.P.D.), New York Post-Graduate Medical School and Hospital. Price $3.00 net.

Eye, Ear, Nose, and Throat Nursing. By A. Edward Davis, A.M., M.D., Professor of Diseases of the Eye in the New York Post-Graduate Medical School and Hospital, and Beaman Douglass, M.D., Professor of Diseases of the Nose and Throat in the New York Post-Graduate Medical School and Hospital. Price $1.25 net.

FISCHER, GUSTAV, Jena.

Sinnesorgane. Erste Abteilung. Geruchsorgan (Organon olfactus) und Geschmacksorgan. Mit Benutzung einiger Vorarbeiten von M. v. Brunn. Von Professor Dr. E. Kallius in Göttingen. Handbuch der Anatomie des Menschen. Herausgegeben von Professor Dr. Karl von Bardeleben. Fünfter Band. Erste Abteilung. Zweiter Teil. (Lieferung 13.) Subskriptionspreis M.5.40. Einzelpreis M.6.40.

Klinisches Jahrbuch. Herausgegeben von Professor Dr. Freih. v. Eiselberg, Professor Dr. Flügge, Professor Dr. Freih. v. Mering, und Professor Dr. Werth. Vierzehnter Band. Zweites Heft. Price not stated.

GURNEY AND JACKSON, 10, Paternoster-row, E.C.

Annual Reports on the Progress of Chemistry for 1904. Issued by the Chemical Society. Vol. I. Price 4s. 6d. net.

HIRSCHWALD, AUGUST, Unter den Linden, 68, Berlin, N.W.

Ueber die parasitäre Theorie in der Aetiologie der Krebse. Von E. v. Leyden. Vortrag gehalten in der Berliner medizinischen Gesellschaft am 8. März, 1905. Price M.1.50.

J. B. LIPPINCOTT COMPANY, 5, Henrietta-street, Covent-garden, W.C.

Hand Atlas of Human Anatomy. By Werner Spalteholz, Extraordinary Professor of Anatomy in the University and Custodian of the Anatomical Museum at Leipzig. Edited and translated from the third German edition by Lewellys F. Barker, Professor of Anatomy in the University of Chicago and Rush Medical College. With a Preface by Franklin P. Mall, Professor of Anatomy in the Johns Hopkins University at Baltimore. Three volumes. Cloth, £2 2s. net per set.

LAWRENCE AND BULLEN, LIMITED, 16, Henrietta-street, W.C.

The Simplest Cure. Suggestions for a Rational View of the Prevention and Treatment of Disease. By F. Marsden Burnett, M.D. Lond., D.P.H. Cantab. Price 2s. net.

LONGMANS, GREEN, AND CO., 39, Paternoster-row, E.C.

Hay Fever. (A Novel.) By Walter Heries Pollock and Guy C. Pollock. Price 3s. 6d.

MACMILLAN AND CO., LIMITED, London.

The Historical Relations of Medicine and Surgery to the End of the Sixteenth Century. An Address delivered at the St. Louis Congress in 1904 by T. Clifford Allbutt, M.A., M.D., Hon. M.D. Dubl., Hon. LL.D. Glasgow, Hon. D.Sc. Oxf. and Vict., F.R.C.P., F.R.S., F.L.S., F.S.A., Regius Professor of Physic in the University of Cambridge. Price 2s. 6d. net.

OLIPHANT, ANDERSON, AND FERRIER, Edinburgh and London.

The Origin and Nature of Man. By S. B. G. McKinney, M.A., L.R.C.P. Edin. Part V. The Bible. Price 6d. net.

RUDEVAL, F. R. DE, 4, Rue Antoine Dubois, Paris.

Vichy. Etude Clinique des Indications et des Contre-Indications. Par les Docteurs Fernand Lambert, Médecin Principal de 2e classe, Médecin-chef de l'Hôpital militaire thermal de Vichy, et Victor Raymond, Médecin-major de 2e classe, à l'Hôpital militaire thermal de Vichy. Price Fr.2.

UNWIN, T. FISHER, Paternoster-square, E.C.

The Hungry Forties. Life under the Bread Tax. With an Introduction by Mrs. Cobden Unwin. Price 6d.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BATLEY, A. BROOK, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Christchurch (Hants) Union Workhouse and Cottage Homes.

BOND, FRANCIS T., M.D. Lond., M.R.C.S., F.R.S. Edin., has been appointed Medical Officer of Health of the Chippenham Urban District.

COOK, JOSEPH BASIL, M.D., B.Ch. Vict., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant Medical Superintendent to the Kensington Infirmary, Marloes-road, W.

HANCOCK, W. I., F.R.C.S. Eng., has been appointed Surgeon to the Ophthalmic Department of the Bolingbroke Hospital, Wandsworth-common, S.W.

HOPE, WILLIAM MOORE, M.R.C.S., L.S.A., D.P.H. Eng., has been appointed Medical Officer of Health of the City of Gloucester.

JAQUES, ROBERT, F.R.C.S. Eng., has been appointed House Surgeon to the Royal Eye Hospital, Southwark, S.E.

KELLY, C. I., L.S.A., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Portumna District of the county of Galway.

LEMAN, THOMAS CURTIS, M.D. Brux., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer of Health by the Chipping Sodbury (Gloucestershire) District Council.

LOCK, J. L., M.B., B.S. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Uxbridge District of the county of Middlesex and for the Denham District of the county of Buckingham.

MORIARTY, R. E., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Sherburn District of the county of York.

MUDGE, JAMES, M.R.C.S., L.R.C.P. Edin., L.S.A., has been appointed Medical Officer of Health of the West Penwith (Cornwall) Rural District.

POWER, D'ARCY, F.R.C.S. Eng., has been appointed Surgeon to the Bolingbroke Hospital, Wandsworth-common, S.W.

RYALL, CHARLES, F.R.C.S. Eng., has been appointed Assistant Surgeon to the Bolingbroke Hospital, Wandsworth-common, S.W.

SCHOFIELD, S. R., M.B., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

SODEN, ARNOLD EDWARD, M.R.C.S., L.R.C.P. Lond., has been appointed Deputy Public Vaccinator for the Second District St. Columb Major (Cornwall) Union.

SYKES, WILLIAM, M.D., F.S.A., has been appointed Surgeon and Agent to Admiralty and Coastguard at Paignton, S. Devon, and Medical Examiner to Prudential Assurance Company for Paignton and District.

THOMSON, H. CAMPBELL, M.D. Lond., F.R.C.P. Lond., has been appointed Physician to the Bolingbroke Hospital, Wandsworth-common, S.W.

TWIGG, R. C., M.B., B.Ch., B.A.O., has been appointed Anæsthetist to the Bolingbroke Hospital, Wandsworth-common, S.W.

WIGAN, CHARLES ARTHUR, M.D. Durh., M.R.C.S., L.S.A., has been appointed Chairman of the Portishead (Somerset) District Council.

WRIGHT, WILLIAM, M.B., B.C., D.P.H. Camb., has been appointed Assistant Medical Officer of Health of Glasgow.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—Senior and Junior Resident Medical Officers for six months. Honorarium at rate of £20 and £10 per annum respectively, with board and lodging.

BRISTOL GENERAL HOSPITAL.—Assistant House Physician. Salary £60, with board, residence, &c.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Physician, unmarried. Salary £90 a year, with board and lodging. Also Second Honorary Physician.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—House Surgeon. Salary at rate of £50 per annum, with board and residence.

CHARTHAM, NEAR CANTERBURY, KENT COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £140, with board, quarters, attendance, and washing.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Assistant House Surgeon. Salary £60 per annum, with rooms, board, washing, and attendance.

CRUMPSALL, MANCHESTER WORKHOUSE.—Junior Resident Assistant Medical Officer, unmarried. Salary £110 per annum, with apartments, fire, light, washing, and attendance.

DUNFERMLINE, CARNEGIE COLLEGE OF HYGIENE AND PHYSICAL TRAINING.—Medical Man. Salary £300 per annum.

FAREHAM UNION.—District Medical Officer and Public Vaccinator. Salary £120 per annum, and fees.

GRIMSBY AND DISTRICT HOSPITAL.—Resident House Surgeon. Salary according to qualifications; lodging and washing provided.

GUY'S HOSPITAL DENTAL SCHOOL.—Travelling Scholarship. Value £100.

HASTINGS, FAIRLIGHT HALL CONVALESCENT HOME.—Visiting Physician (honorary).

HELLINGLY, EAST SUSSEX COUNTY ASYLUM.—Assistant Medical Officer and Pathologist. Salary £175 per annum, with board, lodging, washing, and attendance.

HULL, ROYAL INFIRMARY.—House Physician, unmarried. Salary 80 guineas per annum, with board and apartments.

LEICESTER, PARISH OF, POOR-LAW INFIRMARY.—Resident Assistant Medical Officer. Salary £110 per annum, with rations, apartments, and washing.

LISTER INSTITUTE OF PREVENTIVE MEDICINE.—Assistant Bacteriologist to the Serum Department, Elstree, Herts. Salary £200 per annum, with rooms.

LIVERPOOL, ROYAL SOUTHERN HOSPITAL.—Junior House Surgeon. Salary 60 guineas per annum.

MARGARET-STREET HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Cavendish-square, W.—Physician (honorary).

MARGATE, ROYAL SEA BATHING HOSPITAL.—Honorary Assistant Visiting Surgeon.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer for six months. Salary £80 per annum, with board, attendance, and washing.

NEWCASTLE-UPON-TYNE, UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.—Demonstrator of Bacteriology.

NORFOLK AND NORWICH HOSPITAL.—House Physician, unmarried. Salary £80 a year, with board, lodging, and washing.

NORTHAMPTON GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with apartments, board, attendance, and washing.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Pathologist and Bacteriologist. Salary £75 per annum, with lunch.

NORTH-WEST LONDON HOSPITAL, Kentish Town-road.—Resident Medical Officer, also Assistant Resident Medical Officer, both for six months. Salaries at rate of £50 per annum, with board, residence, and washing.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Resident Medical Officer for three months. Salary at rate of £80 per annum, with board, residence, and washing.

ROCHESTER, ST. BARTHOLOMEW'S HOSPITAL.—House Surgeon, also House Physician. Salaries £110 per annum, with board and residence.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Hunterian Professors, Arris and Gale Lecturer, and Erasmus Wilson Lecturer.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Junior Obstetric Assistant (female) for six months. Board, lodging, and washing provided.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, Waterloo Bridge-road, S.E.—Resident Medical Officer. Salary at rate of £100 per annum.

SALFORD ROYAL HOSPITAL.—Honorary Physician.

SHEFFIELD ROYAL INFIRMARY.—Ophthalmic House Surgeon. Salary £80 per annum. Also Assistant House Surgeon. Salary £70 per annum. Also Junior House Physician. Salary £60 per annum. Board, lodging, and washing in each case.

SOMERSET, ADMINISTRATIVE COUNTY OF.—Consulting Medical Officer of Health. Salary £150 per annum.

SOUTHWARK UNION INFIRMARY, East Dulwich-grove, S.E.—Assistant Medical Superintendent. Salary £150 per annum, increasing to £160, with apartments, board, and washing.

THORPE, NORWICH, NORFOLK COUNTY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £150 per annum, with board, attendance, quarters, washing, &c.

TOWER HAMLETS DISPENSARY, White Horse-street, Stepney, E.—Resident Medical Officer. Salary £150 per annum, with rooms, coals, gas, and attendance.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Surgeon for six months. Honorarium £25, with board and lodging.

WALSALL AND DISTRICT HOSPITAL.—Assistant House Surgeon. Salary £50 per annum, with board, residence, and washing.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, PARALYSIS, AND EPILEPSY, 73, Welbeck-street, London, W.—Honorary Assistant Physician.

WESTMINSTER GENERAL DISPENSARY.—Honorary Surgeon.

WINWICK, WARRINGTON, LANCASHIRE COUNTY ASYLUM.—Locum Tenens Medical Officer, unmarried, for about four months. Salary four guineas per week, with apartments, board, attendance, and washing.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Aldershot in the county of Hants.

Births, Marriages, and Deaths.

BIRTHS.

FOOKS.—On May 1st, at Broadway House, Five Ways, Edgbaston, to Dr. and Mrs. W. Pemberton Fooks, a son.

LOMAS.—On April 28th, at Tuddenham St. Mary, Mildenhall, the wife of Alfred Lomas, M.B., Ch.B., of a daughter.

NICHOLSON.—On April 28th, at Roundhay-road, Leeds, the wife of T. Marshall Nicholson, M.A. Oxon., M.R.C.S., L.R.C.P., of a daughter.

VOELCKER.—On April 25th, at Harley-street, the wife of Arthur Francis Voelcker, M.D., F.R.C.P., of a son.

WALLACE.—On April 29th, at Earl's-court-road, S.W., the wife of Frank G. Wallace, M.A., M.B., B.C., of a daughter.

WATSON.—At Lingcroft, West Byfleet, Surrey, the wife of J. K. Watson, M.D., of a daughter.

MARRIAGES.

ARMSTRONG—KENT.—On April 26th, at All Souls, Langham-place, W., Walter Seymour Armstrong, M.B., L.R.C.P., M.R.C.S., to Florence Hannah, widow of the late Bertie Gordon Kent, of Malsmawr Hall, Montgomeryshire.

WOOD-PETTIWARD.—On April 25th, at St. Andrew's Church, Finborough, by the Rev. E. Nelson, cousin of the bride, assisted by the Rev. T. H. Housecroft, vicar of the parish, the Rev. Canon Blunt, uncle of the bride, and the Rev. A. Karney, rector of Woolpit, Orby R. M. Wood, M.B., C.M., of Woolpit, fourth son of the late Rev. James Russell Wood, LL.D., of Woodbridge and Beyton, to Helen Alice, youngest daughter of R. J. Pettiward, Esq., of Finborough Hall, Stowmarket.

DEATHS.

HANSON.—On April 23rd, at Titchfield, Hants, Arthur Stephen Hanson, M.R.C.S., L.R.C.P., youngest son of the late Stephen Hanson, rector of Weeting, Norfolk.

SHIMELD.—On May 2nd, at Salisbury House, Ilford, Essex, James Shimeld, L.R.C.P., L.R.C.S. Edin., L.A.H. Dublin, late M.O.H., aged 57 years.

WAINWRIGHT.—On April 25th, at Aldwyck, Studland, Frederick R. Wainwright, M.D., M.R.C.S., L.R.C.P., of London.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE TRAFFIC IN MEDICAL PRACTICES.

IN the *Daily Mail* of April 25th there appeared a letter under the above heading which we print below:—

TRAFFIC IN MEDICAL PRACTICES.

To the Editor of the "Daily Mail."

SIR,—Anyone opening the medical journals would be struck with the fabulous incomes apparently earned by doctors. The advertisement columns teem with notices of the sale of practices from £500 to £2000 a year; but it is well known that 99 per cent. of such advertisements are not genuine.

When a man is tempted to purchase a practice, say, for £1000, he may, if has made a good bargain, pay off £50 a year for 20 years; but he will begin to wonder why he gave £1000 for the privilege of working for a living.

The "heads" of the profession consider it beneath their dignity to buy and sell practices, and were it not for the support which medical journals receive from advertisements in the practice market this kind of trade would greatly disappear.

And yet these journals and associations receive subscriptions from men who can hardly pay their tradesmen's bills and who have been lured into signing transfer deeds more disastrous than many of those of the lowest types of the money-lending fraternity, their last and remaining hope being to do somebody as they have been done by. In this way "the honour and dignity of the profession" is upheld. M.D.

If it is "well known that 99 per cent. of such advertisements are not genuine" we wonder why advertisers persist in advertising. No newspaper, not even the *Daily Mail*, can give an absolute guarantee that all the advertisements which appear in its columns are genuine and we venture to say that more care is exercised in the advertisement columns of medical journals to keep out fraudulent advertisements than in any other branch of journalism. No one except a fool would buy a practice on the mere statement of the vendor. If the vendor allows his books to be examined the buyer has only to get an expert to make the examination. If, on the contrary, an examination is refused by the vendor this is proof that the statements made by him are not genuine.

THE NON-RETURN OF PHOTOGRAPHS.

IN certain advertisements, especially for locum-tenents and assistants, it not infrequently happens that the advertiser asks applicants to inclose their photographs and we regret to say that it also not infrequently happens that the photographs are not returned to their owners. Now photographs are the property of the gentlemen whom they represent and who pay for them; they are lent to advertisers for mutual convenience and when their purpose has been served they should be returned. As no one can want to make a collection of the photographs of perfectly strange gentlemen it is clear that the retention (of which serious complaint is occasionally made to us) is due only to carelessness, but people have no right to keep the property of other people whether the act results from carelessness or otherwise. In the case of a frequent offender we should like to hear what argument he is prepared with that should prevent us from violating the ordinary rule of editorial discretion and giving his name to his outraged victims.

THE HIGHER EDUCATION OF THE BLIND.

THE Rev. Jaffray B. Nicholson, headmaster of the College for the Higher Education of the Blind at Worcester, has written an interesting pamphlet on the work of the College which was founded in 1896 by the late Rev. R. S. Blair, an assistant master at the King's School, Worcester. Pupils join the College at all ages from eight to 20 years, or even at a more advanced age. Latin and arithmetic are made the basis of the education given, though divinity, English grammar, history, and geography are taught at an early period of the curriculum. Science is not taught partly because its expense puts the subject out of reach of the College and partly because it is doubtful whether it would prove of educational value if taught theoretically. "The *facts* of science are as interesting to the blind as to the seeing but they can gather these for themselves; their time in school can be much better spent." In answer to the question, Is it worth while to confer an advanced education upon a comparatively small number of the blind in view of the length of time it requires and its great expense? the author points out that since the College was founded upwards of 110 pupils have passed through it, nearly 50 of whom have graduated at the universities. More than half of those who have graduated are now ministers of religion, while many more (including some who did not go to any university) are engaged with considerable success in the scholastic, legal, and musical professions, as well as in business life.

A QUESTION OF ETHICS.

To the Editors of THE LANCET.

SIRS,—In the interests of medical ethics will you allow me to point out that your answer in the last number of THE LANCET to the question submitted by "Ethics" is at variance with the rules which have been laid down elsewhere. It is a point upon which it is most desirable that the profession should be agreed because if practitioners feel that they cannot ask a colleague in consultation without the risk of being superseded by him, this practice which you rightly describe as a very valuable one will be hindered and the confidence which practitioners ought to feel in one another will be destroyed. In the address recently given by Dr. Maclaren of Carlisle on the Relations of Medical Men to Each Other, he expresses the prevailing opinion on this matter:—

> "The consultant practitioner should consider himself introduced by the attending practitioner. Prudence and equity alike enjoin that he should not supersede him. His connexion with the case should terminate with the consultation. It would be manifestly unfair to the ordinary medical attendant that he should call in another man for the good of his patient with the possibility of being displaced by the newcomer. The consulting practitioner is often sorely pressed to take over the case where there is a real or imaginary grievance, and it is often hard to convince patients or their friends that they are asking for a dishonourable act. We must also allow that there are limitations and exceptions to the application of the rule. We may agree that the obligation does not last for ever. After the lapse of time, differing according to circumstances, as men of sense we must hold that the influence of the introduction is worn out and that it should not be considered a breach of professional decency for a practitioner to become the ordinary medical attendant, because he has at some distant period acted as consultant to the same patient. The interval should be long and the circumstances such as justify a reasonable man in changing his medical attendant."

This states the case very well. One would wish to make the prohibition as absolute as possible but it is clear that this would be unfair to a medical practitioner occupying a good position and therefore likely to be called in by his brethren as it would taboo a number of the people in his neighbourhood for the remainder of his life. It has been suggested that the rule should be "during the present illness or within two years." It certainly ought not to be possible for the practitioner introduced as a consultant to take over the whole family at once as you suggest he may.

I am, Sirs, yours faithfully,

EQUITY.

*** All that "Equity" says we agree with, and this almost, if not quite, appears from our words. But suppose the patient says, "I will employ the second practitioner (who was not exactly in the usual position of a consultant in the particular case) and if he will not attend me I will call in yet another medical man," what course is to be pursued? The whole medical profession cannot boycott the patient.—ED. L.

THE "AIRLIGHT."

THE introduction of the incandescent mantle has made possible a very simple method of gas lighting applicable for domestic purposes. By means of an apparatus which can be easily accommodated on a small table a mixture of gasoline vapour and air is obtained which burns with a hot, nearly colourless flame, and is thus available for actuating the incandescent mantle. The air contains approximately 5 per cent. of gasoline vapour. The light given is intense, one burner being equal, it is said, to 35 ordinary fish-tail burners or 31 16-candle-power electric incandescent lamps, and the cost of producing and maintaining 1000 candle power is about 1*d.* per hour. The "airlight" system, as it is called, thus provides an efficient and simple gas installation for the house which is remote from public lighting supplies. The apparatus is easily managed and once started requires little attention. It is, in fact, facetiously described by the British-American Safety Airlight Company, of 66, Victoria-street, Westminster, London, S.W., as "fool proof."

MEDICAL EVIDENCE AT CORONERS' INQUESTS.

To the Editors of THE LANCET.

SIRS,—I am desirous of ventilating through your valuable columns the following case and of asking your and your readers' opinion thereon. I may say that I am not actuated in doing so by any personal feeling whatever but I am of opinion that a grave public danger exists if one of His Majesty's coroners who (without any medical qualification whatever) is permitted to suggest to the jury the actual cause of death and to have the same returned when the medical man who was called in to see the person who was dying is in total ignorance of the cause of death without a post-mortem examination. The following are briefly the facts:—

I was called, on Friday, April 14th, to see a boy, aged seven years, and upon arrival found the patient unconscious and dying, death ensuing shortly after my departure. I was told that he had been to school the previous day and was playing in the street at 8.30 P.M.; he was then well but was dead before 1 P.M. the next day. I communicated with the coroner, Mr. Wynne E. Baxter, through the usual channel, adding that I could not possibly certify and that a post-mortem examination

was necessary. I was much surprised that my request was not granted. I attended the subsequent inquiry on April 18th and beg to append the evidence taken in court.

"The mother: The child was vomiting like water and phlegm. I put him to bed; he became light-headed. On Friday morning I called in Dr. Kennard who gave no hope; he died at 1 P.M. He has not met with any injury as far as I know, but has suffered from cough. [No evidence of duration of cough was given in the coroner's court or elsewhere.—D. F. K.] During night deceased groaned as if in pain. He was at school on Thursday and was playing in the court until 3.30 P.M.

Douglas Fredk. Kennard, L.R.C.P., L.R.C.S. Edin., 139, Hanbury-street, N.E., deposed to being called and finding deceased child dying and he died an hour later. He continued: He was unconscious when I saw him, one pupil being contracted, the other dilated.

The Coroner: And what do you say is the probable cause of death?—Witness: I have no idea of the cause of death, it might be due to a blow or anything.

The Coroner: You have come here at the expense of £1 1s. to the county to assist me and you say that it may be a blow. Did you see any mark?—Witness: No.

The Coroner: Do you generally find wheezing arise from a blow?—Witness: No.

The Coroner: Then it is simply a reckless statement on your part; very well, you cannot assist me, so I must do without your assistance.

The Coroner (to Jury): I suggest that the child was subject to bronchitis, then got a cold on the lungs, and congestion of lungs was set up; if you think deceased was poisoned or met with an injury we will have a pathologist from the London Hospital to make a fuller examination; but if you are satisfied and say that you don't think it necessary you may return a verdict. I don't think it necessary to have the poor child cut up for idle curiosity. I suggest to you that the child died of pneumonia.

The jury adopted the coroner's suggestion and a verdict to that effect was recorded."

I wish to add, Sirs, that I have obtained the opinion of several of my local *confrères*, who are unanimous in condemning the coroner's action, and I have had the pleasure of having a conference *re* the above case with Mr. A. J. Pepper, who is of opinion that a post mortem examination should have been granted to ascertain the cause of death, which, I may further add, in my opinion was certainly, at least there was no evidence whatever to prove so, not pneumonia.

I cannot reconcile the fact of a schoolboy regularly attending his school and in his usual health up to the eve of the day of his death dying from pneumonia in the manner Mr. Wynne E. Baxter suggests.

I am, Sirs, yours faithfully,

April 29th, 1905. DOUGLAS F. KENNARD.

THE TREATMENT OF CHRONIC ALCOHOLISM.

To the Editors of THE LANCET.

SIRS,—I should be very glad if any of your readers could give me specific information as to the efficacy, as well as particulars, of a treatment of chronic alcoholism by means of hypodermic injection of atropine. I am, Sirs, yours faithfully,

C. F. TUCKER, M.B., Ch.B. Melb.

Beeac, Victoria, March 27th, 1905.

BREAKING UP THE STREETS.

THE following paragraph, which appeared in a recent issue of our contemporary, the *Westminster Gazette*, shows that the Paris police have evidently grasped the inner meaning of breaking up a street in a manner which is as yet unknown to our slower Anglo-Saxon mental working:—

A QUAINT DELUSION IN PARIS.

About 5 o'clock yesterday afternoon four men might have been seen taking up the paving-stones and making "soundings" around the Panthéon. The gendarmes were communicated with, and on arrival inquired what the workers were doing. They replied that they were endeavouring to find a spring to furnish water for the transformation of the dome of the Panthéon into a fountain. The officers tactfully offered to send helpers and promptly four policemen in disguise came to help the amateur engineers who were taken by the gendarmes to the infirmary at the depôt; they had recently escaped from a lunatic asylum.

THE RULE OF THE ROAD.

To the Editors of THE LANCET.

SIRS,—Your correspondent "Observer" in his letter upon Manners in the London Streets advocates the adoption of a uniform rule of the road—i.e., that both foot passengers and vehicles should keep to the same side, which for some unknown reason he declares should be the left, although he has mentioned that in France the right is chosen. May I point out that whatever may be the origin of the British custom of walking on the right and riding or driving on the left, it has this consideration to recommend it. The pedestrian, if the rule is observed where there is no footpath, is always on the other side of the road to that occupied by vehicles and horses (including motor-cars and bicycles) coming upon him from behind. He can keep an eye on those which will pass near him and avoid them if necessary without turning his head in order to see how closely they intend to "shave" him. I am, Sirs, yours faithfully,

CONSERVATIVE.

A WARNING POISON BOTTLE.

Messrs. Kenneth Brown and Co., a firm of solicitors, have submitted to us a specially shaped bottle invented by one of their clients with a view to minimise the danger of poisonous liniments and the like being mistaken for internal medicines. The bottle is longitudinally constricted on both sides, with the result that it closely resembles the well-known pinched-in "Black Forest" bottles which are commonly used for whisky and its shape will certainly render it impossible for anybody picking it up in the dark to mistake it for an ordinary medicine bottle. The idea seems to be a good one but no device of this kind can be an absolutely certain guard against occasional gross carelessness.

AN OCTOGENARIAN MEDICAL STUDENT.

IT is announced in the *Novosti* that the Russian Minister of Education has authorised the admission to examination before the medical examination committee of the Kieff University of St. Vladimir for the degree of doctor, of Phedor Maratzevitch, who is over 80 years of age. According to the *Kieff Gazette*, at the end of the "fifties," Maratzevitch attended the lectures at the University of Kharkoff and then he entered the University of St. Vladimir in the year 1863, being then over 40 years of age, but he did not obtain a degree.

J. H.—1. A circular of the nature described can be sent round by A to his own patients. He must be careful to send it only to patients whose names appear on his books, and as far as possible it is advisable to substitute a personal introduction. 2. This is a purely legal question. The conditions of partnership are decided by the general law of the land as modified by the special conditions of the agreement.

Geologist.—Without knowing the exact purpose for which our correspondent requires a text-book on elementary hygiene it is difficult to recommend any particular work. Is the book required for consultation or for examination purposes, and if the latter what examination has the student in his mind?

F.R.C.S. Edin.—It is not easy to answer the questions categorically but we will give them further consideration. It seems to us that the medical men both acted quite properly in every respect.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (9th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.).

WEDNESDAY (10th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.) Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.).

THURSDAY (11th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.).

FRIDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Royal Ear (10 A.M.).

SATURDAY (13th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (8th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8 P.M. General Meeting. Election of Officers and Council for Session 1905-06. 8.30 P.M. Ordinary Meeting. Discussion on the Perineal and Supra-pubic Methods of Prostatectomy (opened by Mr. R. Harrison).

TUESDAY (9th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY, (20, Hanover-square, W.).—8.30 P.M. Dr. F. P. Weber: A Case of "Splenomegalic" or "Myelopathic" Polycythæmia with True Plethora and Arterial Hypertonia without Cyanosis.—Dr. W. P. S. Branson: Abdominal Tuberculosis in Childhood, a Clinical Study.

WEDNESDAY (10th).—DERMATOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—5.15 P.M. Demonstration of Cases of Interest.

THURSDAY (11th).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road, W.).—8.30 P.M. Paper:—Dr. H. Walsham: On the Use of the Roentgen Rays in the Diagnosis of Diseases of the Chest (with lantern demonstration).

FRIDAY (12th).—BRITISH RHINOLOGICAL, LARYNGOLOGICAL, AND OTOLOGICAL ASSOCIATION (11, Chandos-street, Cavendish-square, W.).—4 P.M. Cases will be shown by Dr. Abercrombie, Dr. Kelson, Mr. M. Collier, and Mr. Nourse. Communications:—Dr. G. C. Wilkin: The Prevalence of Adenoids in the Childlife of this Country.—Mr. M. Collier: On Treatment of Intermittent Nasal Obstruction.

CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Papers:—Dr. S. Phillips: A Case of Typhoid Fever with Pneumonia due to the Typhoid Bacillus (with specimen and microscopic sections exhibited).—Mr. J. Hutchinson, jun., and Mr. H. Lett: (1) The Operative Treatment of Certain Cases of Fracture of the Astragalus; (2) A Series of Cases of Fracture of the Astragalus and Os Calcis.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (8th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. Galloway: Clinique. (Skin.) 5.15 P.M. Dr. W. Ll. Andriezen: The Nature of Mental Derangement.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Baldwin: Practical Surgery.

TUESDAY (9th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. R. Squire: Clinique. (Medical.) 5.15 P.M. Dr. L. Smith: Some Clinical Aspects of Nephritis.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Armour: Head Injuries.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Dr. Batten: Family and Hereditary Disease.

WEDNESDAY (10th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Cantlie: Clinique. (Surgical.) 5.15 P.M. Dr. W. S. A. Griffith: The Prevention and Treatment of Post-partum Hæmorrhage.

POST GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Armour: Head Injuries.

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Demonstration: Dr. Wylie: Naso-Pharynx.

THURSDAY (11th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique: (Surgical.) 5.15 P.M. Mr. R. Morison: When would You Operate?

POST-GRADUATE COLLEGE (London County Asylum, Hanwell).—3 P.M. Dr. R. H. Cole: General Paralysis.

CHARING CROSS HOSPITAL.—4 P.M. Mr. S. Boyd: Demonstration of Surgical Cases. (Post-Graduate Course.)

SAMARITAN FREE HOSPITAL FOR WOMEN (Marylebone-road, N.W.).—3 P.M. Lecture:—Dr. Roberts: Cases from the Wards.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Lecture-Demonstration:—Dr. H. D. Rolleston: High Arterial Tension, its Results and Prevention.

FRIDAY (12th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. StClair Thomson: Clinique. (Throat.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.). 5 P.M. Dr. Reece: Cerebro-Spinal Meningitis.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Dr. Batten: Family and Hereditary Disease.

CHILDHOOD SOCIETY AND THE BRITISH CHILD-STUDY ASSOCIATION (Parkes Museum, Margaret-street, W.).—8 P.M. Prof. Ll. Morgan: Imitation. (Arranged by the British Child-Study Association.)

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

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Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, MR. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTICE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, May 4th, 1905.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
April 28	29·67	S.W.	...	96	58	51	51	55	Cloudy
,, 29	29·51	S.W.	0·03	95	60	49	50	54	Cloudy
,, 30	29·42	S.	0·17	97	59	48	49	51	Cloudy
May 1	29·42	S.W.	0·10	106	60	49	50	54	Cloudy
,, 2	29·37	S.W.	0·09	97	58	47	48	50	Cloudy
,, 3	29·94	W.	0·03	110	59	45	46	50	Fine
,, 4	30·21	N.E.	...	98	56	42	45	49	Fine

During the week marked copies of the following newspapers have been received:—*Ilkley Courier, Westminster Gazette, Surrey Advertiser, Reading Mercury, Literary Digest (New York), Scientific American, Mining Journal, Daily News, Liverpool Post and Mercury, Daily Chronicle, Standard, Aberdeen Weekly Free Press, Plymouth Mercury, Freeman's Journal, Hertfordshire Mercury, Windsor and Eton Express, Guernsey Star, Kentish Mercury, Preston Guardian, &c.*

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